C-60 Luminaire is one reason why Gulf Canada

Square is the world's most energy-efficient building.

Calgary, Canada, has a cold, energy-draining climate. But despite the -40° temperatures, Gulf Canada Square, a remarkable new building there, was built without a heating plant. Instead, it uses heat sources that are often wasted — lights, electrical equipment, and people. By gathering, storing, and redirecting the heat they produce during the normal workday, its HVAC system makes a conventional furnace unnecessary. This is one reason Gulf Canada Square uses only 1/5 the energy generally consumed by buildings in this area. One million square feet of Armstrong C-60 Luminaire is another. This installation uses only 1.56 watts per square foot. Conventional systems consume more than twice as much energy to produce the same quality of illumination. But Luminaire does more than save energy. It actually produces illumination that makes seeing easier by cutting the distracting glare that cuts productivity. (This system produces a minimum of 69 ESI footcandles over 80% of the area. Standard footcandles initially measure 100.) So whether you install a flat-module Luminaire system or the vaulted modules used in Gulf Canada Square, C-60 can give an ideal light to work in — from boardrooms to open-plan offices.

C-60 incorporates acoustical-control, fire-protection, and air-diffusion features to make buildings quieter, safer, and more comfortable. And your ceiling layout won't have to be changed whenever spatial changes have to be made.

Write to Armstrong, Dept. 12NPA, P.O. Box 3001, Lancaster, PA 17604. Learn how the C-60 Luminaire Ceiling System can help make your building a model of energy efficiency, too.

Circle No. 310 on Reader Service Card.

From the Indoor World of Armstrong
INTRODUCING ELEGANT EXPRESSIONS™

Now you can give contract interiors you design the luxurious look of European velvet in a durable American embossed carpet. Elegant Expressions by Armstrong. It lets you carpet even the high-traffic areas as impressively as the most distinguished boardrooms.

Exclusive Sculptron® embossing imparts a custom look to the 1/10" gauge velvet construction of Elegant Expressions. The deep rich embossing creates a patterned texture in three intricate designs. The embossing also retains the pattern even under heavy wear. And the dense, durable surface permits easy movement of chair casters and rolling loads.

Elegant Expressions is made of Antron III, an Armstrong approved fiber. This continuous filament nylon works with the embossed construction to hide dirt and control static. So even after soiling, cleaning, and hard use, Elegant Expressions maintains its good looks and your design's integrity.

To see samples, contact your Armstrong Representative or write to Armstrong, Dept. 12XPA, Lancaster, PA 17604. We'll be happy to show you how designing with Elegant Expressions can add an enduring dimension to your commercial interiors.
EMBOSSED VELVET COMMERCIAL CARPET
THE ATLANTIC.

ANTRON IS A DU PONT REGISTERED TRADEMARK.
9 Editorial: Prismacolor and the art of building

Architectural design

65 Introduction: 2 x 2
Two buildings by each of two firms, one from the East Coast, the other from the West Coast, represent a wide range of uses.

66 Best bets
Although it has none of the devices for which the company’s catalog showrooms are known, Best Products company headquarters in Richmond, Va, is an unusual design by Hardy Holzman Pfeiffer Associates.

74 Raising the roof
The Dance Studio and Music Performance Hall for St. Paul’s School in New Hampshire is more conservative than some of the earlier work of Hardy Holzman Pfeiffer Associates.

78 Memory materialized
The South Side Settlement Center in Columbus, Oh, by Studio Works uses rugged materials meant to last for a century. Mark Mack has written a critique.

86 Venetian masque
The Gagosian Studio, a residence and art gallery in Venice, Ca, by Studio Works, is like a fortress on its windowless exterior, but its contrasting interiors are soft. By Barbara Goldstein.

90 Interventions
Three small projects inserted into existing construction include George Baird’s alterations to a house in Toronto; Steven Holl’s addition to and remodeling of a Victorian House; and Taft Architects’ attachment of a service core onto a mid-19th-Century structure in Galveston.

94 Panoply of images
The State of Illinois Center, a joint venture of C.F. Murphy Associates and Lester B. Knight, designed by Helmut Jahn, combines technology and image. An energy analysis is included.

Technics

103 Specifications clinic: Organizing your information resources

104 Your solution or your leak
There are many avenues by which moisture finds its way into buildings. Keeping it out presents difficult design, engineering and application problems.

Departments

12 Views

21 News report

28 Energy update

44 Calendar

120 It’s the law

127 Books

138 Products and literature

Building materials

Coming next month

Job mart

Directory of advertisers

Reader service card

Loose subscription card in U.S. and Canadian editions

Editor
John Morris Dixon, FAIA
Executive Editor
James A. Murphy, AIA
Managing Editor
Barbara McCarthy
Senior Editors
David A. Morton, Features, Books
Suzanne Stephenson, Features
Richard D. Rush, AIA, Technics
Associate Editor
Gary Miller, Interior Design
Copy Editor
Virginia Cheshire
Editorial Assistants
Veronica Hartman
Kay Dall

Graphics
George Codere, Art Director
Susan Newberry, Art and Production
David W. Scott, AIA, Architectural drawing

Contributing Editors
Norman Coplan, It’s the Law
William C. Alstrom, AIA, FCSI
Walter Rosenfeld, CSI, Alvin D. Skolnik, FCSI, Specifications clinic

Correspondents
Esther McCoy, Los Angeles
Barbara Goldstein, Los Angeles
Sally Woodbridge, San Francisco
George McCue, St. Louis
Peter Papademetriou, AIA, Houston
Ralph Warchartson, AIA, AIP, PE, Miami
David A. Greenespan, Chicago
Carleton Knight III, Washington
Jon Hayes Carlsten, AIA, Atlanta
Monica Pidgeon, London
Joanna Baymiller, Minneapolis

Publisher
James J. Hoverman

Daniel H. Desimone, Business Manager
Louise Brischler, Administrative Assistant
Margaret McGrath, Sales Service
Wilma S. Virgil, Marketing Service
Nancy Lee Gallagher, Promotion Manager
Elizabeth A. Mercere, Promotions Coord.
Lyn Musley, Promotion Assistant
Vicki Nichol, Production Manager
Gloria Adams, Associate Dir. of Circulation
Mary Ann Salko, Fulfillment Manager
Herney Rivas, Customer Service Manager

Penton/IPC

Progressive Architecture (USPS 903-800) is published monthly in Rehoboth Publishing, A Division of Penton IPC, Philip H. Hubbard, Jr., President, Harry L. Martin, Vice-President, Penton IPC, Thomas L. Dempsey, Chairman, S. F. Marino, President, N. N. Goodwin, Jr., Benjamin L. Hummel, Joseph Luka, Paul Slobick, Executive Vice-President.

Executive and editorial offices, 400 Summer St., Stamford, CT 06901 (203-348-7501).

Subscription information:
Send all subscription orders, payments, and changes of address to Progressive Architecture, P.O. Box 80250, Cleveland, OH 44101 (216-866-0560). When filling, change of address, give former as well as new address and zip codes, and include recent address label if possible. Allow two months for changes.

Publisher reserves right to refuse unqualified subscriptions. Professionals include architectural and architectural-engineering firm personnel and architects, designers, engineers, and draftsmen employed in allied fields.

Subscription rates, payable in advance, are:

Professional: year $15 $18 $50
Nonprofessional: year $30 $35 $50
Single copy $ 6 $ 6.50 $ 7

Indexed in Art Index, Architectural Index, Engineering Index, Controlled circulation postage rates paid at Hartford, CT 06113. Volume LXIII, No. 2. Printed in U.S.A. Copyright © 1983. Penton/IPC.

Cover: Fragments of four buildings by two firms: HHPA’s Best Products headquarters (p. 66) and the building at St. Paul’s School (p. 74); Studio Works’ South Side Settlement (p. 78) and Gagosian Studio (p. 86).
The Armstrong Quietlook™ Silok® Ceiling provides you with a beautiful solution to the noise problem an open plan office presents. Because Quietlook Silok offers all the sound-absorbing properties you need, insuring speech privacy and preventing noise problems, with an NRC range of .90 – 1.0 and an NIC’ of 20.

At the same time, its high style beautifully enhances the look of the prestigious open plan office. In fact, Quietlook Silok is as attractive as it is functional. The clean modern look of its tegular-edge panels perfectly highlights your contemporary open plan design. The recessed exposed grid allows you the option of colored or reflective grids to add even stronger design accents to ceiling areas.

So before you design an open plan office, compare the sophisticated elegance of Quietlook Silok with the look of ordinary lay-in panels.

For a free booklet about Quietlook Silok Ceilings, write Armstrong, Dept. 12NPA, Lancaster, PA 17604.
60,000 sq. ft.
Translucent fabric coated with TEFNON® brings the outdoors in.

"Florida Festival" in Orlando, Fla., has the highest light transmission (18%) yet developed for a roofing fabric. The permanent structure is a free-form tension canopy made of Fiberglas® fabric coated with DuPont TEFILON fluorocarbon resin. The 60,000 sq. ft. complex is designed to provide recreation, entertainment and a bustling marketplace attraction for the millions who visit Sea World Park each year.

Planning Indoor Ambiance The architects and planners in charge of design and construction made innovative use of sweeping arches, wide interior spaces and the high translucency fabric to create a lush environment in which tropical plants flourish.

Visitors to "Florida Festival" are treated to a unique indoor ambiance. They experience the light of the sun, the movement of the clouds, the sound of rainfall.

Strong and Durable The coating of TEFNON provides outstanding long-term resistance to UV deterioration, moisture and temperature extremes. Thus TEFNON protects the glass fabric, enabling it to retain its inherent strength over time. And the non-stick properties of TEFNON help the fabric's brilliant white appearance stay that way as each rainfall washes it clean.

Economical and Energy-Efficient In addition to design flexibility, fabric structures offer today's building planner substantial economic advantages. They often require less time to construct than conventional buildings. And the lower roof loads permit smaller foundations and the use of less structural steel. Operating costs can be reduced, too, through lower energy consumption needed for artificial lighting. The high solar reflectivity of these fabrics minimizes heat gain, reducing air-conditioning requirements.

Send for a Free Brochure A 28-page brochure will tell you more about the distinct advantages of architectural fabrics coated with TEFNON. For your copy, write Du Pont Company, Room 38320-X, Wilmington, DE 19898.

Registered trademark of Owens-Corning Fiberglas Corporation
Bonded Bronze

Bonded bronze has proven its durability over a decade of use and has become synonymous with excellence and elegance in interior surfaces. The timeless and classic textures are as relevant to architecture today as they were ten years ago. During the same ten years many of the most popular versions have actually decreased in price, an amazing performance that brings Bonded Bronze within the reach of more limited budgets. Now Fire Retardant Bonded Bronze is available with Class I fire rating, making it even easier to specify for walls, doors, columns, and elevators on your next project.

Forms & Surfaces Box 5215 Santa Barbara, California 93108 USA (805) 969-4767 969-5033

Circle No. 332 on Reader Service Card
Prismacolor and the art of building

At a time when architectural drawings hang for sale on gallery walls, what part should the craft of building be playing in design?

One of the fundamentals of Modern architecture is that design should honestly express the building techniques of our era. Another, less explicit principle is that drawings are not to be trusted: the one-point perspectives and pastel washes of the Beaux-Arts period have been supplanted by the model, which was thought to be more suitable to our kinetic age and its plastic building forms. Modernist drawings tend to be either sketchy and conceptual (Corbu, Eero Saarinen, Kahn, Giurgola) or technical (Mies van der Rohe)—but in any case color is to be avoided.

Revival of polychromed drawing was one of the early signs of rebellion among the Post-Modernists. Robert Venturi began early to spike drawings of his firm with Pop references, Charles Moore alluded more to commercial renderings, and Graves, to history. As the movement gained momentum, galleries began to exhibit architectural drawings, many for seemingly hypothetical or polemical projects.

The resistance against Post-Modernism was quick to characterize its output as "two-dimensional" and "prismacolor," implying very concisely that such eyewash was not really buildable, or if built would be unresponsive to the realities of life.

Whatever Post-Modernist drawings say about their authors' commitment to meeting real-world needs, they do suggest an indifference to materials and techniques of construction. Buildings appear to be composed of surfaces and ornament all made of the same nonspecific substance. This impression may be borne out in built work, for instance in Moore and partners' Kresge College at Santa Cruz (P/A, May 1974), which is entirely painted gypboard and stucco—no joints, no moldings. Graves' work's date to compose of geometries, patterns, and colors, with no attention drawn to specific materials. Venturi's work, on the other hand, typically draws on the distinctive qualities of brick, shingles—even interior plaster in bold modeling; his firm's house at Vail, Co (P/A, Oct. 1977) is an exercise in tradition-based wood craftsmanship.

Charles Jencks, in his most recent classified catalog of current design (Late Modern Architecture and Other Essays, Rizzoli, 1980) distinguishes "Late-Modernism" from "Post-Modernism," partly on the basis of their attitude toward construction technology. Late-Modernism "takes technological imagery to an extreme that the Modern Movement never reached." There is likely to be a bravura display of "Machine Aesthetic," as in Norman Foster's Sainsbury Centre (P/A, Feb. 1979), but there may instead be articulation of low-tech materials such as the block walls and concrete beams in the work of Herman Hertzberger (P/A, July 1980). Post-Modernism, says Jencks, opposes the Machine Aesthetic with a "variable mixed aesthetic depending on context"—or, as noted above, depending on the architect's viewpoint.

Throughout history, the high architecture of established cultures has generally played down the specifics of fabrication. It was only in rustic places and at the fringes of cultures—Medieval Russia and Scandinavia, for instance—or in periods of cultural transition, like the Romanesque, that building technique was visibly celebrated. In the 19th-Century west, the pattern was broken: rapid technological change and romantic notions of a primitive past—opposing forms to aesthetics—reemphasized craft over form. (This had happened before, notably in the 16th-Century Japanese revival of the primitive teahouse style.) The formalists have fought back repeatedly over the past century-and-a-half—carrying the day at various times and places—and they are making headway again today.

The work featured in this issue covers the gamut of today's attitudes—albeit unevenly. Hardy Holzman Pfeiffer Associates (pp. 66-77) have clearly been Late Modernist in their fascination with industrial components, except that they use them with irony, and in their two works in this issue, they add historical and contextual allusions that lean toward Post-Modernism. The Studio Works buildings (pp. 78-89) are clearly Post-Modern in concept, yet the South Side Settlement shows a concentration on construction specifics that recalls the work of Hertzberger. Among the smaller "Intervention" projects (pp. 90-95) only Steven Holl's stands for formal composition without reference to techics; Tait's contrasts an abstract, neutral, geometrical plane with another that is unmistakably made up of tiles.

There is no universally correct balance in articulating craft vs form, but there may be a right way for the situation at hand. There is something primitive and intimate about the emphasis of materials and joinery; there is something detached and universal about subordinating specifics to overall formal concept. This was as true in Uxmal or Isfahan as it was in Rome or London, and still is. There may also be the situations where the two approaches can be juxtaposed, but it's like using Zip-a-tone with a watercolor wash: only the most skillful can carry it off.

Prismacolor is a registered trademark of the Berol Corporation.
This post office delivers first-class energy savings.

More efficient mail handling was the primary objective of this new 300,000 square foot Postal Service building. But exceptional energy efficiency was very high on the list of specifications.

That's why, for maximum energy efficiency, STYROFOAM® brand insulation was used from frostline to skyline: Two inches in the IRMA® (Insulated Roof Membrane Assembly) roof, a concept developed by The Dow Chemical Company and proven in installations across the country; two more inches in the cavity walls, the traditional location for STYROFOAM brand insulation's unexcelled, lasting performance; and finally, a two-inch thickness was extended below grade, between the foundation and backfill, down to the frostline. It adds up to a package that'll be delivering big energy savings for the Postal Service for a long time.

STYROFOAM brand insulation has the proven strength and moisture-resistance to deliver lasting high R-value from frostline to skyline, especially in tough, below-grade applications. That's because it's made by an exclusive extrusion process, resulting in a unique closed-cell structure. That's why STYROFOAM delivers documented high performance in these applications.
Accept no substitutes. Specify STYROFOAM brand insulation. Make sure it's actually applied. Then you can be confident that you have invested in long-term, lasting energy savings from frostline to skyline.

For more information, write:
The Dow Chemical Company,
STYROFOAM Brand Insulation,
Dept. B58 Midland, MI 48640.

Circle No. 325 on Reader Service Card
Views

Rating the Grand Hyatt

The gist of the introduction to the article "Rating Reuse" (Nov. 1980) by David Morton makes the case that criticism of the whole preservation movement has been silent too long and it is time for P/A to take a critical look at some recent projects. He then promptly launches into an attack on the new Grand Hyatt Hotel and the fact that the old Commodore ballroom "... the best part of it ..." has been irrevocably lost! Mr. Morton, using hotel public relations statements as fact, that the ballroom "... will be restored to retain the traditional ballroom flavor—in all its decorative detail ..." took this to mean a perfect restoration as if it were Grand Central Station itself. The Commodore ballroom had some fine details but was never the Waldorf or Plaza in its elegance. (See photos below.) The old space was inefficient, unable to be subdivided for the many convention and meeting needs of any modern major hotel, had balconies that were never used and a fire hazard, and had major problems of service from kitchens. The restoration of the detail did, in fact, occur, including as well new chandeliers of crystal to achieve lighting levels never before attained, carpet for acoustic purposes and rolling partitions for subdivision capability. Our office fought hard to retain much of the old while under pressure to increase the functionality of this space. There are those now who feel that the "new ballroom," with many of its old features intact and its high ceiling combined with the restored pre-function foyer, make it one of the most "usable" of its kind in the city (Ada Louise Huxtable, New York Times, Oct. 19, 1979).

It seems to me, however, Mr. Morton really misses the entire point by even entering the Grand Hyatt in his "Rating Reuse." It was always the intention of Hyatt/Trump as developers to provide in final form a "new face" on 42nd Street that in turn would help ignite a rebirth of the grimmest and seediest street in America. To many New Yorkers, holed up for so long in the grayness of their environment, the shine and glitter that sparkle from the lobby floor to make even sadder and more reminiscent of what is best about 42nd Street and the New York of old. I feel that not just detail, but character and relationship to the street are needed for buildings to work in such a tight and peopled city as ours.

Now if Mr. Morton had come out into the open in a fair, free-swinging discussion rather than disguising his dislike of the Grand Hyatt along strict preservationist thinking, that would have been a different matter. Instead, he manages to slip in his feelings with the curt characterization "... the huge lobby has been made even bigger and SLATHERED in marble and shiny metals and other opulent materials." There certainly was no attempt here at any restoration. The new lobby in the Hyatt tradition, was meant to provide a "major new public space" directly accessible from 42nd Street, not removed and aloof as was the old Commodore lobby. Obviously the Grand Hyatt does not qualify as a "restored building" and was used by P/A to achieve its own editorial aims. In making its point, "Rating Reuse" has devoted 28 pages of photographs to stark architectural detail, with perhaps two to three photos including any evidence of people. One should ask ... reuse for whom—the architectural photographer? This, to me, goes to the root of Progressive Architecture's strong and ill-conceived, to use Michael Brill's apt phrase, over-identification with "only one of the flowers in the field ..."; it goes too often to a point where the user's needs seem to have a far lesser priority.

Peter Samton
Gruzen & Partners
New York

[Peter Samton points out that restoration of the hotel was never the client's intention. We realize that, and our reference makes it clear. What justified its inclusion in our introductory text is the publicized restoration of one part of the ballroom, as one of the salient features of the remodeling. The promise of the ballroom's restoration was held out to the public and the design community as one of the virtues of a project that did require public support. It does not get the architects entirely off the hook to say simply that the press releases were false and that P/A should not have taken them seriously; the architect has at least some obligation to reconcile public statements about architecture with what is in fact being done. Our knowledge of the restoration was based on three public sources, one of which was released on the letterhead of Gruzen & Partners, and states that "The ballrooms ... will be restored to retain their traditional ballroom flavor ...".]
Not every design justifies using Alcoa® Alply® insulated panels. But those that do have dramatic results.

You’re in the business of creating ideas — in structural forms. Places for people to live, work and play. And when you’re trying to justify your creative expressions through your designs you need a product to give you that design freedom. Alcoa Alply insulated panels have such flexibility by offering the designer a wide range of options to achieve aesthetic desires as well as practical, economical and energy demands. Alply lightweight building panels are made of rigid polystyrene or urethane insulation® laminated between outside and inside skins of aluminum or stainless steel. Alply panels can be factory formed into flat, curved and angled panels — or almost any three-dimensional shape. Panel sizes may vary from small fascia panels to large wall panels. Exterior and interior skins come in a number of different materials and pleasing color finishes. And to satisfy energy needs, Alply panels are available in many thicknesses and in two core materials allowing you to choose the required "U" value.

Contact your nearest Alcoa Alply panel regional distributor, who offers you single-source responsibility — everything from engineering to the completed in-place wall system. Or write: The Stolle Corporation, Alply Division, 1501 Michigan Street, Sidney, Ohio 45365. Your designs deserve the best. Because they could be around a long time.

The use of polyurethane, polystyrene and isocyanurate cores in these applications may present a fire hazard under certain circumstances. Consultation with building code officials and insurance company personnel is recommended.

IBM Building, Southfield, Michigan
Gunnar Birkerts and Associates, Architects
Birmingham, Michigan

Circle No. 313 on Reader Service Card
Announces the Winners in the Architectural Design Competition

First $15,000
Mustafa Kanishka, Salt Lake City.
Mr. Kanishka is a native of Afghanistan with architecture degrees from Kabul University and the University of Utah. He is an employee of Brixen and Christopher, Salt Lake City architects.

Second $10,000
Peter H. Frink, Robert J. Beuchat and Stephen R. Mallon of Frink and Beuchat, Philadelphia. Mr. Frink has an M.S. in Architecture, Columbia and an M.F.A. in Theater Engineering, Yale. Mr. Beuchat’s M.S. in Architecture is from the University of Chile. Mr. Mallon received his Master of Architecture from the University of Pennsylvania.

Third $7,500
Susan P. Gill, principal of Abri, Inc., Boston. Ms. Gill received her Master in Architecture from Harvard and is a former student of Buckminster Fuller and Frei Otto.

Honorable Mention Each $2,500
Gerald I. Anderson
G.I. Anderson & Associates, Architects
Knoxville, Tennessee

Eugene L. Hayes, Architect
Houston, Texas

Gary S. Kautzer
Christopher F. Kronser
Belgium, Wisconsin

Joseph P. Larrivee
Green, Nelson, Weaver & Winsor, Architects, Inc.
Minneapolis, Minnesota

Joe Middleton
Townsley I. Schwab
Shreveport, Louisiana

Guntis Plesums, Architect
Eugene, Oregon

Lyrinda Snyderman
MBT Associates
San Francisco, California

Helios Tension Products Inc.
1802 Tacoma Way
Redwood City CA 94063
415/364-1770

HELIOS TENSION PRODUCTS
TAIYO KOGYO CO., LTD.
Soft Shell Structures Division

Circle No. 335 on Reader Service
The Project
Design an outdoor theater using a tensioned membrane—for economy of space enclosure, festive color, long life and demountability (optional).

Specify site conditions: sloped or flat; wind loading for the selected location.

Create an original, unpublished design for an enclosure seating 1500 to 3000 persons and a stage of 1500 to 4000 square feet.

The HELIOS 80 jury, convened in November, has premiated these entrants.

HELIOS 80 is sponsored by Helios Tension Products Inc. in conjunction with its affiliate in Japan, Taiyo Kogyo Co. Ltd.

The Jury
Dr. Pietro Belluschi, FAIA, Portland, Oregon. Retired Dean of School of Architecture and Planning, MIT. Currently design consultant on projects throughout the world.

Eduardo Catalano, Cambridge, Massachusetts. Professor of Architecture, MIT. Associated with Dr. Belluschi in design of Julliard School of Music, Lincoln Center, New York.

Dr. Stefan Medwadowski, Consulting Structural Engineer, San Francisco, California. Private practice is devoted to design of structures as consultant to architects.

George Hoover, AIA, Denver, Colorado. Principal in the architecture firm, Hoover Berg Desmond. Designer of major projects in the Denver area.

Dr. Jack Rouse, Cincinnati, Ohio. Head of King Productions. In charge of all creative, theatrical, design and entertainment at Taft Broadcasting theme parks.

Professional Advisor: Elisabeth Kendall Thompson, FAIA, Berkeley, California.
A Dynamic Celebration of Los Angeles Past and Design's Present and Future, A Weekend for Business Education and Fun

Friday Merchandising: Its Impact and Influence on the Designer presented by Richard Marcus Chairman of the Board Neiman Marcus. 90 Years in 90 Minutes: A multi-projector presentation of Los Angeles' interior and architectural design history presented by Jody Greenwald ASID IDEC Coordinator Design Programs UCLA. The Office in Transition: A PDC TWO presentation on technological developments that are reshaping the office of the future. The Commuter Ticket Promenade: A special walk through PDC showroom events while entering a drawing to win an expense paid vacation for two in Acapulco.


Thursday Pre-Market. ASID; National Industry Foundation West Coast Seminar
Monday Post Market. IBD Student Rally: Perspective '81.

The Market Event of The West!

Pacific Design Center
8687 Melrose Avenue Los Angeles, CA 90069, (213) 657-0800

Circle No. 352 on Reader Service Card
An elevator should do more than go up and down.

These days it's not enough to just get people where they want to go. Worker productivity, energy consumption, and tenant satisfaction are all affected by the elevator service in your buildings.

Yet a surprising number of architects still design without a second thought to elevator and escalator specs. Pity. They're overlooking options that can make a big difference in their building's utility for years to come.

Savvy architects and planners look to Schindler Haughton to speed passenger service and reduce operating expenses. With sophisticated solid state equipment and the right choice of geared, gearless and hydraulic equipment for the job to be done.

Don't specify elevator and escalator equipment out of habit. Talk with your Schindler Haughton representative. He has a better way to get you up and down.

We're #2 in the world and going one better.

Circle No. 364 on Reader Service Card
6 Reasons Why You Should Buy AMWELD

ECONOMY
- Competitively priced stock products available for quick shipment
- New buildings can be occupied quicker
- Remodeling and maintenance completed on time
- National Safe Transit Association certified door carton assists in damage-free jobsite delivery
- Drywall frame goes up in four to five minutes
- Prefinished units eliminate jobsite painting
- Flush closed door tops no extra charge
- Insulated door at no extra charge
- FM label suitable flush doors no extra charge

SERVICE
- Strong network of stocking distributors to solve your problems
- Local on-the-spot inventory for faster service
- Five day 'redball' service from factory to distributor on popular items
- Distributor personnel factory trained
- Close communications between distributor and factory
- Average factory personnel nearly 20 years service
- Personalized customer service
- Knowledge of market and product
- Technical leadership

AVAILABILITY
- Helps meet completion schedule
- Multi-million dollar inventories of stock items in factory warehouse and in the field
- Large variety of items in inventory
- Local distributors use Fab-a-frame®
- Frames Bonderized® flo-coat primed with prefinish available
- Fastest full quantity shipment of any major manufacturer

SELECTION
- Full line of stock doors and frames
- Wide range of engineered products to supplement stock line
- Wide hardware prep selection
- Full line of UL and FM listed products
- 250 ° temperature rise mineral core door
- Hot dipped galvanized material in .6 or .8
- Steel full glass entrance units to replace aluminum
- Security rear entrance doors
- Extra heavy duty stile and rail doors
- Inter-lock® masonry frames
- Sure-fit® drywall frames
- Adjustable remodeling and maintenance frame
- Handless frame and door
- Standard and UL doors up to 4010
- 13 designer prefinished colors

ENERGY SAVINGS WITH SUPERCORE®
- Up to 25% savings over conventional paper honeycomb
- Supercore® door material doesn't emit toxic fumes
- Supercore® doesn't absorb water
- Supercore® resists rot and mildew
- Life Cycle Costing available for your area

CONSISTENT QUALITY
- Reduces call backs
- Quality control program provides product integrity
- Patented projection welding
- High mechanical strength
- Door faces without seams
- 16-gauge steel door channels top and bottom
- 14-gauge lock reinforcements
- 10-gauge hinge reinforcement 1/4" door
- 6-gauge hinge reinforcement optional
- 18 and 16-gauge doors and frames
- Noise control, solid, secure, no hollow rattle
- Sound transmission advantages
- Reliability since 1918

#1 AMWELD SERVICE

Steel Doors/Frames and Hardware
776 Plant Street
Niles, Ohio 44446
(216) 652-9971

Circle No. 315 on Reader Service Card
Sert named
AIA Gold Medal winner

The American Institute of Architects has this year bestowed its highest honor, the Gold Medal, upon architect and urban planner Josep Lluis Sert, FAIA, of Cambridge, Ma. In naming the 1981 winner of the award, which recognizes "most distinguished service to the architectural profession or to the Institute," the AIA cited the far-reaching concepts of artistic collaboration and social awareness that Sert brought to the practice of architecture.

A native of Barcelona, Sert received his Master of Architecture from Barcelona's Escuela Superior de Arquitectura. During the decade 1929-39, he joined an international group of experimental architects at Le Corbusier's atelier in Paris, helped form the International Congresses of Modern Architecture (CIAM), and was a member of GATEPAC, a group of architects in Barcelona affiliated with CIAM.

Sert and Luis Lacasa designed the Spanish Pavilion for the 1937 Paris Exposition, but when Spain's republican government collapsed two years later, Sert moved to the United States. In New York City, he founded the firm of Town Planning Associates, with Paul Lester Weiner and Paul Schultz. He taught at Yale University and then served as dean of the Harvard Graduate School of Design from 1953 to 1969. He opened his own office in Cambridge in 1955, and a few years later formed the partnership of Sert, Jackson & Gourley—now Sert, Jackson & Associates.

Sert's firm has won many AIA awards, including, in 1979, two Honor Awards: one for the Joan Miró Foundation/Center for Studies of Contemporary Art, Barcelona, Spain; the other for the Undergraduate Science Center at Harvard University. In 1965, Sert, Jackson & Associates received an AIA Honor Award for the Peabody Terrace apartments in Cambridge. Other major works include apartment complexes at Roosevelt Island, New York; urban development complexes in Boston and Worcester, Ma, and Harbison, SC; and a French resort village. His firm currently is involved in two major projects in Saudi Arabia.

Sert wrote several books, including *Can Our Cities Survive?* in 1942, based on the principle of CIAM's charter. The 78-year-old Sert is the 42nd architect to win the Gold Medal since its inception in 1907.

HHPA wins
AIA Firm Award

The AIA has selected the New York City firm of Hardy Holzman Pfeiffer Associates as recipient of its 1981 Architectural Firm Award. The partnership, founded in 1967 by Hugh Hardy, FAIA, Malcolm Holzman, AIA, and Norman Pfeiffer, AIA, has been involved in the design of museums, civic buildings, housing, medical and educational facilities, performing arts centers, and commercial developments. It is especially known for its work in preservation and recycling, and for its expressive design use of prefabricated building elements.

HHPA received AIA Honor Awards in 1976 for the Columbus, In, Occupational Center, in 1978 for the Cooper-Hewitt Museum in New York, and in 1979 for the St. Louis Art Museum. Among its completed adaptive use projects are the Newark Community Center on the Arts; Dance Theater of Harlem School, New York; Madison, Wi, Civic Center; and Spirit Square Art Center, Charlotte, NC. Recently completed projects include the corporate headquarters for Best Products in Richmond, Va (pp. 66-73), and the Dance Studio and Music Performance Hall at St. Paul's School, Concord, NH (pp. 74-77).

In addition to numerous awards for individual projects, the partners received the New York Chapter AIA's 1978 Medal of Honor. And in 1974, HHPA was presented the National Institute of Arts and Letters' coveted Brunner Prize in Architecture.
George Fred Keck: 1895–1980

George Fred Keck, one of the pioneers of Modern architecture in America, has passed away in Chicago at the age of 85. Perhaps best known for his residential work in the 1950s—people in Chicago still speak with pride of owning a Keck house—his career and accomplishments are practically unknown to a younger generation.

Keck was born in Watertown, WI, and attended the University of Illinois where he graduated with a degree in architectural engineering rather than design. Keck was an artist, however, who in his later years devoted extensive time to his watercolors. He rarely spoke or wrote about architecture, and when he did he emphasized his belief in functional design and his interest in technical innovation rather than aesthetics.

Keck’s historical importance lies in two areas. In the 1930s, along with Howe & Lescaze, Raymond Hood, Kocher & Frey, and Richard Neutra among others, Keck worked to champion the principles of modern design in this country. He was also one of two early proponents of passive solar heating. Beginning in the mid-1930s, he employed large areas of south-facing glass in conjunction with either roof overhangs calculated to control summer sun or a variety of operable exterior metal louvers, including systems of exterior Venetian blinds and shuttering built into window frames. Keck also experimented with roofs designed to hold water for evaporative cooling in the summertime. The development of panelized materials in the 1930s (plywood, gypsum board, etc.) spurred his interest in prefabrication, culminating in the prefab “Solar Houses” he designed for Green’s Ready-Built Homes of Rockford, IL. Several hundred of these houses were erected throughout the Midwest in the early 1940s.

Keck’s most avant-garde work was done in the 1930s. The small brick apartment house he built near the University of Chicago in 1937 prefigures not only the IIT classroom buildings built by Mies Van der Rohe in the mid-1940s but much of the Mies-influenced residential work of the “Second Chicago School of Architecture.” However, it was the experimental houses Keck designed for the 1933–34 Chicago World’s Fair—“A Century of Progress”—that were his most important works. While Keck’s polygonal “House of Tomorrow,” sheathed continuously in floor-to-ceiling plate glass, was clearly indebted to Buckminster Fuller’s Dymaxion House of 1927, the house he built at the Fair in 1934 was unique. Called the “Crystal House,” made entirely of steel and glass, it combined the ultimate constructivist aesthetic with truly progressive structural and material technology. (It had a totally prefabricated structural frame and hung metal floor and roof decks that were erected in three working days.) Designed as a symbol of evolution of life in a “machine age,” technology and content were fused together in this structure at a level of intention and realization promised but never achieved in European or Russian architecture of the period.

The omission of Keck’s Crystal House from the standard histories of Modern architecture is curious. Keck was appointed the first instructor in architecture at Moholy-Nagy’s New Bauhaus in Chicago as its opening in 1937. Through Moholy he knew the historian Seigfried Giedion. One can only conclude that, like inadmissible evidence at a rigged hearing, the Crystal House was never allowed to contradict the official version of the development of Modern architecture.

In the early 1980s, Keck’s brother William joined him in practice and, along with such long-time employee collaborators as Robert Tague, had an influence on his architecture. In the 1940s and 1950s, Keck & Keck’s work assimilated a greater palette of natural materials, probably influenced by Wright’s Usonian houses. In the 1950s and 1960s, the firm did larger work, municipal buildings and public housing. Their residential work was elegant and spare, reflecting the influence of Mies in a way similar to the West Coast “Case Study Houses” of Soriano and Elwood, but never abandoning their interest in simple, rational construction and passive solar heating.

Keck & Keck’s work has been the subject of two exhibitions, in 1947 at the Colorado Springs Fine Arts Center, and this past year at the Elvehjem Museum of Art at the University of Wisconsin in Madison. The Elvehjem exhibit was documented by a catalog, which is still available. Most of the drawings, photographs, and documents from Keck’s office have been donated to the Wisconsin Historical Society in Madison.

George Fred Keck had a long, distinguished career. He was not a great architect but he produced works of exceptional quality. Among these the Crystal House must be counted as a moment of Usonian House of 1927, the house he built at the Fair in 1934 was unique. Called the “Crystal House,” made entirely of steel and glass, it combined the ultimate constructivist aesthetic with truly progressive structural and material technology. (It had a totally prefabricated structural frame and hung metal floor and roof decks that were erected in three working days.) Designed as a symbol of evolution of life in a “machine age,” technology and content were fused together in this structure at a level of intention and realization promised but never achieved in European or Russian architecture of the period.

The omission of Keck’s Crystal House from the standard histories of Modern architecture is curious. Keck was appointed the first instructor in architecture at Moholy-Nagy’s New Bauhaus in Chicago as its opening in 1937. Through Moholy he knew the historian Seigfried Giedion. One can only conclude that, like inadmissible evidence at a rigged hearing, the Crystal House was never allowed to contradict the official version of the development of Modern architecture.

In the early 1980s, Keck’s brother William joined him in practice and, along with such long-time employee collaborators as Robert Tague, had an influence on his architecture. In the 1940s and 1950s, Keck & Keck’s work assimilated a greater palette of natural materials, probably influenced by Wright’s Usonian houses. In the 1950s and 1960s, the firm did larger work, municipal buildings and public housing. Their residential work was elegant and spare, reflecting the influence of Mies in a way similar to the West Coast “Case Study Houses” of Soriano and Elwood, but never abandoning their interest in simple, rational construction and passive solar heating.

Keck & Keck’s work has been the subject of two exhibitions, in 1947 at the Colorado Springs Fine Arts Center, and this past year at the Elvehjem Museum of Art at the University of Wisconsin in Madison. The Elvehjem exhibit was documented by a catalog, which is still available. Most of the drawings, photographs, and documents from Keck’s office have been donated to the Wisconsin Historical Society in Madison.

George Fred Keck had a long, distinguished career. He was not a great architect but he produced works of exceptional quality. Among these the Crystal House must be counted as a moment of Usonian architecture.

[Stuart Cohen] Infill housing competition in Chicago

While recent counter-polemics have denied the narcissism of architectural drawing exhibits, a competition for an infill townhouse in a Chicago neighborhood proves that such exhibits can exert a positive influence on the built environment.

The competition, “A House for Logan Square,” was organized by the Chicago Chapter of the American Institute of Architects and the Logan Square Economic Redevelopment Corporation (ERC) and was supported in part by a News report continued on page 24]
Some things will be around a long time . . .

and remain maintenance-free!

factory-formed roofing systems

Pre-Weathered

MICROZINC® 70 & MILL FINISH

You'll never encounter call-back problems with Microzinc 70 or Microzinc 80 roofing systems. Install them and forget them. And that includes coping, flashing, fascia and mansards!

Specify either pre-weathered Microzinc 70 or mill-finish Microzinc 80 which weather on-the-job to the same beautiful back-to-nature gray patina so widely acclaimed today. Microzinc products are even better known for their maintenance-free qualities—no leaks, no run-off stains and no rotted materials.

Whether you select Batten-seam or AUTO-LOCK™ Standing-seam (automatic seaming at 14 feet per minute), our LOK™ roofing systems are custom engineered, factory made and delivered directly to the job. Installation is so simple it greatly reduces labor costs. Other on-site savings include—no cleaning, no priming, no painting. And no soldering needed.

For further information, write or call Ed Pejsa at 615/639-8111.

Ball is a registered trademark of the Ball Corporation. © Ball Corporation. 1981.
Why this library is one for the book.

Energy efficiency over,

A blanket of earth provides natural insulation. Saves energy overhead. Creates a horticultural garden underfoot.

under,

Earth berm insulates and deflects north wind over building.

around

1½ inch high-density urethane insulation board wraps around entire building, including the framework. Heat pump system picks up heat from mercury-vapor lights and distributes it around building.

and through.

Andersen Perma-Shield® casement windows. In materials and design, they’re energy efficient through and through.

They’re made of wood, one of nature’s best insulators. And double-pane insulating glass. It can reduce conducted heat loss through the window area by at least 47% (compared to single-pane windows without storms).

Andersen® windows are also built two times more weathertight than industry air-infiltration standard I.S. 2-73—to help seal out weather and save on heating and cooling.

Andersen Perma-Shield vinyl-sheathed windows. When it comes to energy efficiency, they’re one for the book. So specify Andersen—according to the book. See Sweet’s File 8.16/An. Or call your Andersen dealer or distributor. He’s in the Yellow Pages under “Windows.” Or write us direct: Andersen Corporation, Bayport, MN 55003.

The beautiful way to save fuel

Andersen Windowwalls®

Circle No. 309 on Reader Service Card
Energy update

Passive solar design competition

For the First Annual Passive Solar Design Competition, held in conjunction with the Fifth Annual National Passive Solar Conference last October, the jury reviewed over 350 entries and chose 20 winners in seven design categories. These designs, felt the judges, possess the qualities the competition was seeking: they are good architecture, and they are good examples (either built or buildable) of energy-conscious design.

The judges (among whom was this writer) represented a wide diversity of attitudes, and in their sequestered weekend of intense cooperation and consternation, they benefited from the interchange of opinions and the overview of the material which they inspected. The jury consisted of J. Douglas Balcomb, Los Alamos Scientific laboratory, Los Alamos, NM; Peter Carlthorpe, Van der Ryn, Carlthorpe & Partners, Inverness, Ca; William Caudill, Caudill, Rowlett & Scott, Houston; Ralph Johnson, NAHB Research Foundation, Washington, DC; Douglas Kelbaugh, Kelbaugh & Loewie, Princeton, N]; William M.C. Lam, William Lam Associates, Cambridge, Ma; and Richard Rush, Progressive Architecture.

The prerequisite that the buildings be good architecture made the initial cut of projects a subjective but nevertheless simple procedure. The functioning energy qualities of a building are much more difficult to evaluate. In the case of a passive solar building, the interrelationship of the building form and the materials used is combined with climatic data and weather probability. It is easier to point out strategies that will definitely not work than it is to tell how well the strategy chosen will work. For this purpose, the jury was aided by a microcomputer programmed and operated by Doug Balcomb (P/A, April 1980).

There is a great quantity of work being done in passive solar home design. Not much of it is truly designed to be built as a low-budget dwelling. One could lament that fact and hope that the future will bring more efficient multifamily buildings and the tax incentives to encourage them. People who can afford to live in large, single-family homes, however, have the obligation to make them self-sufficient or at least to use an amount of energy commensurate with the amount of oxygen their owners breathe rather than the amount of land they own or the money they have invested.

The strategies employed in commercial buildings differ from those used in house designs. There are more sawtooth roofs, more attempts to create natural daylighting, simpler volumes, and an increased use of atria. Although the greatest interest still focuses on residential construction, there is a great diversity of energy-conserving work in practically all of the different building types and sizes. Also, the fact that a building design is energy-conserving does not necessarily determine its formal vocabulary. The building vocabulary has been enriched by the strategies discussed above as well as the addition of the waterwall, the trombe wall, the solar collectors, and so on, but these are merely "words" or "phrases" in the larger vocabulary of architecture. It is possible to be Post-Modern, Modern, regionally inspired, High Tech, or Rationalist and still have an energy-conserving building.

The winners represent a wide geographical distribution in addition to the requisite building type. The winners are:


**Buildable commercial buildings—** Trust Pharmacy, Grants, NM, Edward Mazzia & Associates; Shelley Ridge Girl Scout Center, Suburban Philadelphia, Bohlin Powell and Larkin Gwinski.

**Buildable multifamily residences—** Row Housing Project, Kitchener, Ontario, Canada, J.E. Fryett; Windcreek Condominiums, Sacramento, Ca, Mogavero & Unruh.


**Built single-family residences**— Sundance I, Reston, Va, Walter F. Roberts; Solar Woodbox, Amherst, MA, Hugh & Shirley Kirley; The Ogg House (P/A, April 1979, p. 115), Santa Fe, NM, Robert W. Peters, Alianza Arquitectos.

**Buildable single-family residences—** Sunshelter Design, Raleigh, NC, Mike Funderbunk and John Meachem; TVA Solar Modular Homes, Memphis, TN, Sizemore/Floyd; Broadhead House, LA Honda, CA, Richard Fernau with Laura Hartman and Jim Axley.

**Retrofit single-family residences—** Waugh Residence, Esridrrdge, Ks, Christopher Theis; Pfister Retrofit, Minneapolis, MN, Peter Pfister, Architectural Alliance.

It is very rare that an architectural competition that is technologically motivated produces a complete set of outstanding results. This is especially true in the extent of new ground-breaking.
Introducing TAMKO TAM-GLASS™

a new generation of fiberglass built-up roofing products.

The TAMKO TAM-GLASS Built-Up Roofing System offers all the advantages of conventional fiberglass — plus improved strength and a broader product line. TAMKO-produced fiberglass mat features improved tensile strength. Unique steps in our manufacturing process give TAM-GLASS fiberglass added strength in the cross-mat direction. The advantage is extra resistance to extreme stresses of thermal shock. And of course, this exclusive construction meets all requirements of ASTM D-2178-76, Type IV.

TAMKO is unique in offering a broader line of fiberglass built-up products. Many companies offer only the fiberglass ply sheet, giving you no choice of base or surfacing options. The TAMKO line includes two base-sheet types, ply sheet, and mineral-surfaced cap sheet. Plus all the advantages of inorganic fiberglass construction. Light in weight. Superior resistance to rotting, curling, warping, fishmouthing, wrinkling, buckling, blistering, and weather oxidation. In addition, its porosity permits moderate amounts of air and moisture to escape during application.

Free 8-page brochure available. Call or write for yours today.

FIBERGLASS BUILT-UP ROOFING SYSTEMS

Asphalt Products, Inc. P.O. Box 1404, Joplin, Missouri 64801 • TWX 910-774-4521 • 1-800-641-4691 (Missouri: 417-624-6644)

Since 1944, the nation’s only manufacturer of organic, glass, and polyester base roofing products.

Circle No. 365 on Reader Service Card
Pella Triple Glass Insulation System
U Value .31
R value 3.23
Shading coefficient .82
Now there's an economical answer to severe weather conditions...

Pella's new
Triple Glass Insulation System.

Here's Pella's latest energy-saving exclusive...the Triple Glass Insulation System. A single fixed pane of glass outside, a removable panel with double insulating glass inside, and a full ¾" of insulating air space between. This combination provides superior energy efficiency. And the price is very reasonable.

Other Pella package options for energy-economy are described below. Pella offers more energy-conserving options than any other major wood window manufacturer. All these options plus many other effective features mean a Pella package offers you the flexibility necessary to design efficient buildings for a wide variety of climates, sites and functions.

**The Double Glass Insulation System** outperforms welded insulating glass, yet costs less per window. (U value, .41; R value, 2.43; shading coefficient, .88)*

**Solarcool® Bronze Glass** in the removable interior panel, can cut cooling costs. (U value, .41; R value, 2.43; shading coefficient, .59)*

**Slimshade®,** set between the panels of the Double Glass Insulation System, cuts heat loss and solar heat gain. (U value, .39; R value, 2.56; shading coefficient, .34)*

**Solarcool and Slimshade** can be combined for energy efficiency plus glare reduction with Slimshade open. (U value, .39; R value, 2.56)*

**Triple Insulating Glass,** ideal for large fixed units and sliding glass doors, provides outstanding energy conservation. (U value, .35; R value, 2.86; shading coefficient, .74)**

---

For more detailed information, use this coupon to send for your free copy of our 28-page, full color catalog on Pella Clad Windows & Sliding Glass Doors. Call Sweet's BUYLINE number or see us in Sweet's General Building File. Or look in the Yellow Pages under "windows", for the phone number of your Pella Distributor.

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>State</td>
</tr>
<tr>
<td>Telephone</td>
<td></td>
</tr>
</tbody>
</table>

**Mail to:** Pella Windows & Doors, Dept. 13981, 100 Main St., Pella, Iowa 50219. Also available throughout Canada. This coupon answered within 24 hours.

Circle No. 359 on Reader Service Card
Parker keeps the support where it should be adjustable.

Many years of experience in the production of grab bars has taught Parker that the field conditions where grab bars are installed vary greatly. That's why Parker provides movable center posts for added strength on extra-length bars and many special application configurations. This allows for adjustment of the bars to place the extra support where it will be the most secure. In addition, bars with corner configurations are split, to allow for proper mounting in corners that are less than square. Parker stainless steel grab bars are available in either 1 1/4" or 1 1/2" diameters, with a choice of wall clearances and mounting styles. To insure maximum safety, specify Parker bars, with adjustable center supports for a custom-fit in the field. See our catalog in Sweets General Building File 10.16PA.

Charles Parker
290 Pratt St., Meriden, CT 06450
Tel: 203-235-6365

Circle No. 347 on Reader Service Card
A Time of Confidence

Born of the great depression, to stand as a monument to faith in the future of America; Rockefeller Center, heart of modern New York.

An electrifying solution to high-density urban land use, the 14 original buildings composed around the great plaza were successfully planned to serve the increasing needs of the people for decades to come.

Thus, Rixson closers were specified for door control. Their performance has proven, again, that no one has ever made a better, more economical closer than a Rixson.

For information on the new generation of Rixson floor closers, contact:

RIXSON-FIREMARK

A DIVISION OF

CONRAC CORPORATION

9100 West Belmont Avenue
Franklin Park, Illinois 60131
and Rexdale, Ontario—
312/671-5670

Circle No. 358 on Reader Service Card
Glass Block for the 80's

...design with confidence

Beautiful and versatile glass block have exceptional insulating and energy conserving capabilities.

Glass block encourages exciting window, wall and partition designs... from soft and subtle to bold and striking... from serpentine shapes to curved or straight panels. With glass block, the taste and skill of the architect or designer are utilized to the fullest.

With glass block you control the transmission of light from the outside or from room-to-room. Light may be directed, diffused, reduced or reflected... translucence or transparency varied. Natural and artificial light may be employed dramatically or subtly to produce interesting environments. Add a sense of space or create a point of interest...design with confidence.

Glass block are made by fusing two halves of pressed glass together. This creates a partial vacuum which gives glass block the insulating value of a 12-inch thick concrete wall (U-value 0.56, R-value 1.79).

Because of this insulating value, heating and air conditioning equipment with reduced capacities may be specified and future energy requirements lowered. Glass block can help to conserve energy... design with confidence.

We want you to design with confidence. For more information on Glass Block for the 80's, contact Pittsburgh Corning Corp., Marketing Department PA0281, 800 Presque Isle Drive, Pittsburgh, PA 15239, Telephone (412) 327-6100.

Pittsburgh Corning's commitment to the 80's

The beauty and energy conservation of glass block have led to a renewed interest by architects and building owners. To meet and encourage this interest, Pittsburgh Corning has undertaken a major modernization of its glass block manufacturing facilities. This modernization, which will be completed in mid-1981, will not affect the availability of glass block for your current or future projects.

Pittsburgh Corning is pleased to announce that Solar Reflective glass block will again be available upon completion of this modernization.

Circle No. 348 on Reader Service Card
ESSEX Glass Block
Diffuses and disperses light uniformly. Pattern is pressed into the inner and outer faces. Available with a fibrous glass insert to control brightness, glare, solar heat gain and light transmission.

SOLAR REFLECTIVE Glass Block (Available mid-1981)
Maximum energy conservation. VUE block pattern with highly reflective, thermally bonded, oxide surface coating which reduces solar heat gain and transmitted light.

DECORA Glass Block
Pattern pressed into inner faces, smooth outer faces. Maximum light transmission and brightness. Available with a fibrous glass insert to control brightness, glare, solar heat gain and light transmission.

VUE and ARGUS Glass Block
VUE provides maximum visibility and light transmission, inner and outer faces are smooth. ARGUS has rounded flutes at right angles on inner faces. Maximum light transmission and brightness.

THINL ine glass block, 3½-inch thick, are available in DELPHI™ and DECORA™ patterns. DELPHI™ has smooth outer faces with a multiple, triangular pattern on the inner faces which produce a prismatic effect. Good light transmission and excellent privacy.

VISTABRI K Solid Glass
Smooth outer surfaces. Solid glass offers excellent light transmission and maximum protection from forcible entry.

PITTSBURGH
CORNING
The original piers were like "fringe" at the edge of a carpet. The first Battery Park plan of 1966 envisioned a megastructure or linear city as a "border" at the edge of a carpet. The new 1979 Master Plan by UDC consultants Alexander Cooper Associates (now Cooper Eckstut Associates) proposes to downplay the issue of the edge. It suggests instead to extend the grid onto the 92 acres of landfill and to rely on the traditional space of the city—the street.

The proposed grid is made up of both the Manhattan grid and a grid generated by the water edge. It contains two groups of middle- to luxury-income housing around a commercial center adjacent to the World Trade Center. The northern housing is to have 5900 to 7700 units, and the southern housing, 6500 to 8500, all constructed and marketed with no government assistance. Each housing group would have services on an arceded and tree-lined avenue. The commercial center, with six million sq ft of commercial space and 150,000 sq ft of retail and entertainment area, is located so as to extend to the water's edge certain of the World Trade Center facilities: transportation hub, retail mall, and tourist attraction. The housing is to be permitted to rise about 30 stories, and the commercial complex 30-50 stories.

Since the megastructure plan of 1969 failed as a "take all or nothing" proposition, this new strategy has the pragmatism of New York's original growth. And because the original Battery Park City Authority (now merged with UDC and directed by Richard Kahan) has spent most of its bond-derived money, new building will be undertaken by private developers, given incentives.

Three housing towers with 1700 dwelling units, remnants of the 1969 proposal, are now being built, but the new plans aim to regain solvency by staging the commercial center's construction next. The American Stock Exchange, which was going to locate in the commercial area, has retracted. Nevertheless, the Canadian firm Olympia & York Developments Ltd. recently successfully bid to develop the whole center; it is conducting a limited competition for the architectural design of the mixed-use complex. At present, the bidders remain (from an original field of seven) Cesar Pelli & Associates and Mitchell/Giurgola Associates, with Zimmerman/Parsons Architects.

As a number of waterside urban areas that formerly served the vital shipping industry become available, many American cities will be confronted with similar problems regarding new development. New proposals will become test cases for this common condition. These schemes should be analyzed for the typology of their edge pieces. In terms of such an examination, a few questions arise about the proposal for BPC, which ultimately could be resolved in future development:

1. The Battery Park City grid proposal allows neither the orthogonal nor the diagonal pattern to dominate, possibly creating a disorientation that the grid was intended to prevent. The mostly square blocks are atypical for Manhattan and thus do not assist orientation.

2. The new internal dead-end avenues neither connect to the context nor relate strongly to the waterfront edge. Could not these important streets run east-west, thereby connecting to, and possibly revitalizing, the existing context?

3. Only 50 percent of the streets leading to the site from Broadway permit views of the water (three out of five leading from City Hall Park are blocked). These existing vistas are some of the few places where one can sense the water from the center.

4. Large-scaled blocks of 30-story housing do not exist in Manhattan. To achieve a scale of buildings proper for the water edge and related to the context, more careful zoning restrictions may be required. Furthermore, recent developments with low-rise, high-density housing types should be studied.

5. The 28 acres, or 30 percent open space, is made up of promenades at the edge connected by open space nodes where important streets come into the site. Chambers Street is notable as it ends in an important park, but it is questionable if this residual, nonfigural space is a suitable termination to the street that connects City Hall and ends in the grand arched entrance to McKim, Mead & White's Municipal Building. The two geometries produce many triangular intersections, all having different orientations, and seem to be coincidental rather than intentional. The "figure" of the open public space needs...
Permanent fabric architecture from Birdair Structures.

A proven, durable system that offers an exciting alternative to traditional construction methods — and a freedom of design and conceptual versatility never before possible. Not just a wide span roof, but a complete environmental envelope that provides translucency, solar reflectivity, and esthetics. Simply put, a revolution in architectural form.

Florida Festival, a 60,000 square foot shopping and entertainment center at Sea World in Orlando, was fabricated and erected by Birdair Structures. The 90,000 square foot roof is made of SHEERFILL<sup>®</sup>, CHEMFAB's architectural fabric of fiberglass coated with TEFLEX<sup>®</sup>. With 18% solar transmission, it permits the growth of 40 foot palm trees and other tropical flora. Natural daylight bathes the interior to highlight merchants' products. The high reflectivity of SHEERFILL creates a cooler interior under the hot Florida sun, providing substantial energy savings through greatly reduced air-conditioning requirements.

The design and erection of permanent fabric structures require the specialized skills of a company with the demonstrated ability to help translate vision into reality. Birdair Structures is the pioneer and leader in this field. We invented the technology. Extensive involvement in virtually every permanent fabric structure built to date makes us uniquely qualified to offer state-of-the-art structural analysis and detailing assistance to the architect. We are the only single source that can offer integrated expertise in every phase of fabric structure technology: design, engineering, weaving, coating, fabrication, and erection.

Bring your new ideas to us, Birdair Structures, a division of CHEMFAB, 2015 Walden Avenue, Buffalo, New York 14225 U.S.A. (716) 684-9500 Telex: 91-353 Cable: Birdair Buffalo.

BIRD AIR STRUCTURES
A DIVISION OF CHEMFAB

Circle No. 321 on Reader Service Card
more attention as the plan develops.

While Cooper Ecustat Associates’ scheme for Battery Park City was officially approved over a year ago by Mayor Koch and Governor Carey, the process of legalizing all the new street configurations is a lengthy one, and has not been completed. The Plan, then, is not yet totally frozen, and the planners claim to be still revising it, taking certain aspects, such as those mentioned above, into consideration.

Michael Schwarting

Michael Schwarting is a principal of the New York architectural firm Design Collaborative and is an assistant professor at Columbia University.

Orlando’s Tinker Building is restored

There might not be any architects alive who saw them, but the Tinker-to-Evers-to-Chance infield of the 1910 Chicago Cubs became a legend in its time, and the double-play magicians got themselves into the World Series. Hall-of-Famer Joe Tinker, who became a real estate tycoon in Orlando, Fl., and built the Tinker Building, was commemorated in 1980, on the 100th anniversary of his birth, with the restoration of his 1925 office building and its election to the National Register of Historic Places.

Mid-Florida AIA, presenting ten awards for excellence in Architecture, Landscape Architecture, and Interior Design for 1980, chose as first prize the Tinker Building, Orlando’s first commercial restoration. The jury commented that it was “a fascinating renovation with sophisticated interiors that perhaps even surpass the original ones.” The design has also received the George Stuart Award for Restoration (a local prize), as well as the Central Florida Builder’s Exchange for design and execution of a complex wood stairway.

The design was executed by Leslie Di-voll and Chalmers Yielding, a partnership concerned with preserving Florida’s architectural past. The architects

[News report continued on page 44]
THE ONLY DOOR THAT’S EASY ON THE FINGERS IS NOW EASY ON THE EYES.

Admittedly, looks were not the first consideration in designing our Safetyline Door. Safety was. So we gave it a flexible rubber guard to save fingers. And perhaps even save you a lawsuit.

We gave it a cylindrical stile and a 2-point flush-mounted locking mechanism. And a push-pull that fits snugly so it doesn’t snag clothing.

It was the only door of its kind. And it still is.

Now come the looks. A variety of looks, including the textured panel above, to dovetail with any design.

And if you don’t find exactly what you want, we’ll custom make it.

Either way, you get a door that doesn’t give up aesthetics for safety. Or vice-versa.

Your Amarlite Representative will be happy to show you all the ways we’ve dressed up the Safetyline Door.

For more information, write to Amarlite Anaconda, P.O. Box 1719, Atlanta, Ga. 30301. Or you can call us at (404) 691-5750.

AMARLITE
ANAConDA
THE RIGHT GLASS CAN HIDE, HEAT, DRAMATIZE.

The right glass. More than ever, PPG glass is an indispensable tool for architects who wed energy efficiency to aesthetic power.

And one strength these three diverse buildings share—besides recognition of their design excellence by the AIA—is the choice of PPG glass to bring the architects' visions to life.

Look, for example, at the imaginative use of PPG's high-efficiency reflective Solarban® 550-8 (2) glass in the handsome, five-stepped international headquarters of Geico Corporation outside Minneapolis.

Combined with an ingenious heat recovery system, the insulating power of Solarban glass helps minimize heat loss—and gain—even in the extremes of Minnesota's climate. It's also the right glass to help the building meld with and mirror the peaceful, wooded lakefront landscape.


The panels combine with a low-velocity fan system to capture and channel hot or cool air to where it's needed most, summer or winter. So energy costs are held down dramatically.

And even in the forward-looking architectural environment of Columbus, Indiana, the high drama created by PPG's reflective Solarcool® Bronze glass helps set Bell of Indiana's switching station apart. The original building is hidden behind a handsome structural silicone curtain wall system. And the new addition sparkles with a combination of opaque and transparent...
Solarcool glass that helps redistribute heat from the switching equipment with maximum efficiency. PPG makes just the right glass to bring out the best in your new designs, too. All you need to prove it is a look at Sweet's 8.26/Pp.

Then write to PPG when it's time to choose your glass. We can't promise you'll win awards. But we can guarantee you a broad spectrum of intelligent, beautiful choices. And that one of them will be the right glass.

PPG Industries, Inc.,
One Gateway Center,
Pittsburgh, PA 15222.
Delta DASH (Delta Airlines Special Handling) gives you same day delivery if we receive your small packages during normal business hours. And DASH serves over 80 cities in the United States plus San Juan, Montreal, Nassau, Bermuda, London, England and Frankfurt, Germany.

Packages (up to 50 lbs.) are accepted at airport ticket counters up to 30 minutes before flight time. Up to 60 minutes at cargo terminals. Size limit is 90 inches: width + length + height.

The airport-to-airport rate between any two of Delta’s domestic cities is $40 ($25 between Dallas/Ft Worth and Los Angeles or San Diego or San Francisco). Pick-up and delivery is available at extra charge. Call (800) 638-7333, toll free. (In Baltimore, 269-6393.)

For top priority shipments over 50 lbs., use Delta Air Express. It guarantees your package gets on the flight specified. For full details, call your Delta cargo office.

Calendar

Exhibitions


Through April 5. The Search for Alexander, an exhibition of art from the Hellenistic era. The National Gallery of Art, Washington, DC. This exhibit will tour to the Art Institute of Chicago (May 16–Sept. 7) and thence to the Museum of Fine Arts, Boston, and to the Fine Arts Museum, San Francisco.

Through May 31. Architecture in [News report continued on page 46]
A New England home turns to the sun and Outsulation® for energy efficiency.

This private home in Lakeville, Connecticut, faces South from a tree sheltered hilltop.

The owners, Mr. and Mrs. Gordon Reid, asked for a plan that used new design criteria based on energy efficient materials and concepts.

The answer includes passive solar controls, triple glazing and a butterfly roof with thirty-three solar collectors to supply basic heating, cooling and domestic hot water.

A 1200-gallon storage tank in the cellar feeds this system. And, it's backed-up by a heat pump working off the night power grid.

Obviously, these active and passive solar systems require massive insulation to maintain their input of energy. The choice? Dryvit System Outsulation for exterior walls.

And while Outsulation provides massive insulation, it also presents a beautiful exterior surface.

A permanent surface that resists cracking and fading. A true wall system that seals thermal bridges, minimizes thermal shock and prevents the damage of water penetration.

Outsulation works in the Reid solar home. Not surprising since it is backed by thirty years of success in schools, high rises, industrial and commercial complexes.

Let us prove it can work for you. Call or write, stating your application: new construction or retrofit.
HIGH-PRIORITY QUESTION:

How can you cut energy costs and preserve open space with today's buildings?

IN-DEPTH ANSWER:

Build a new generation of reinforced concrete buildings—underground.

A good example: Williamson Hall on the Minneapolis Campus of the University of Minnesota. It's a site-cast reinforced concrete structure, 95% of which is below grade level.

The Hall houses a Bookstore with a main sales floor two levels below grade and an interior courtyard one level below grade. A clerestory window looks into the sales area at grade level.

There is also an Admissions and Records Facility in the Hall. A sunken courtyard is covered by glass set at 45° with the upper floor treated as a mezzanine, so light reaches the lower floor. Large planters form a screen above the courtyard to let the sun penetrate in winter, while blocking it in summer.

Energy savings are considerable, because the structure can virtually heat itself. Its large thermal mass serves as an energy storage system. With underground walls that are naturally good insulators and mild soil temperatures, heat loss is exceptionally low. On non-work days, heating/cooling systems can even be shut down and the building temperature allowed to drift slowly.

On an average January day (14° F), the occupied building will need 55% or less energy than an equivalent above-ground building. However, with a newly-installed solar collection system, energy savings will increase to about 80% to 100% during the heating season and 45% during the cooling season.

The designers of Williamson Hall were also able to preserve valuable open space and provide views of existing historic buildings. Only about 25% of the Hall's total plan area extends above grade.

When the questions are how to conserve energy or preserve open space, the answer is obvious. Go underground with reinforced concrete.

Architect: Meyers and Bennett Architecture/BRW, Edina, Minnesota.

Structural Engineer: Meyer, Borgman and Johnson, Inc., Minneapolis, Minnesota.


Owner: University of Minnesota, Minneapolis Campus.


Feb. 2-20. Symbolic Relief: The Exploratory Architecture of J.H. Eccleston Johnson, Jr. (Texas Post-Modernism), Southwestern University, Georgetown, TX.


Convention

May 17-22. AIA Convention, Minneapolis.

Competitions

Feb. 27. Submission deadline for Hexter Awards "Interiors of the Year." Entry forms and information available from S.M. Hexter Co., 979 Third Ave., New York, NY 10022.

April 30. Entry deadline for Women in Design International Competition '81. All fields of design. For prospects write Call For Entries, WID International, 530 Howard St., 2nd Floor, San Francisco, CA 94105, Attn.: Rebecca Covalt (415) 285-9106.
Billed as “the market event of the west,” West Week ’81 is scheduled for Friday, March 20, Saturday, March 21, and Sunday, March 22. The fifth exposition by the showrooms at Los Angeles’ Pacific Design Center will be accompanied by a seminar program. Richard Marcus, chairman of Nieman-Marcus, will speak on merchandising’s influence on design. Paolo Soleri will discuss cities of the future. Jody Greenwald will trace 90 years of Los Angelene architecture.

And a group of researchers and practitioners will present a full day of programs on computer graphics. Entertainment will include a Hollywood cabaret night and a musical fashion review from Hollywood’s golden era.

For the first time, the contract furnishings firms from the second floor of the building have formed their own PDC II association. These approximately 30 firms will present one of the highlights of the market—a group of internationally known designers who will both give formal talks and be available all day March 21 for informal private discussions. The formal symposium will be moderated by architect Richard Saul Wurman, and included among the 34 designers will be: Vico Magistretti, Tobia Scarpa, Paul Tuttle, Ward Bennett, Luigi Massoni, William Stumpf, Niels Diffrient, Emilio Ambasz, Michael Graves, Massimo Vignelli, Joseph D’Urso, and Bruce Burdick.
All-Steel: 8000 Series comprises straight and curved panels, work surfaces, task lighting, and power panels. Circle 100 on reader service card

Arc-Com Fabrics: NovaStrand water-resistant wallcovering collection in 29 styles meets Class 6 and ASTM-E84 ratings. Circle 101 on reader service card

Castelli Furniture: KS 500 beam-mounted seating, with or without armrest, has fully upholstered seat and back; table is white plastic laminate. Circle 104 on reader service card

CrofterCraft: Natural linen wallcoverings in 87 styles have Class A flame-spread rating; widths range from 24 to 54 in. Circle 105 on reader service card

Artemide: Megaron floor lamp designed by Gian-franco Frattini has extruded aluminum body, steel base, and glossy paint finish in black, white, red, or green. Circle 102 on reader service card

Atelier International: Leonardo chair in armless version from a collection that includes high and low, arm and armless designs by Paul Tuttle/Alex Strassle. Circle 103 on reader service card

[Continued on page 54]
The Perfect Fit. The embodiment of both comfort and curves, the DePolo/Dunbar chair is an invitation to luxury. Sculptured wood frame is fully upholstered in your choice of fabric. Whether specified for executive or residential environment, it’s everything you expect from Dunbar.

DUNBAR
50 SOUTH FIFTH STREET, BROWNSWOOD, INDIANA 46204
SHOWROOMS: NEW YORK, LONDON, ATLANTA & DALLAS, DENVER, LOS ANGELES, SAN FRANCISCO

Circle No. 329 on Reader Service Card
FOR THE FINE HOMES OF THE WORLD

poggenpohl
The ultimate in kitchen and bath cabinetry

With more than eighty years of expertise in cabinet craftsmanship, over 60 cabinet styles and 450 accessory features are now available to discriminating homeowners. Please write for complimentary brochures. Or send $5.50 for our complete kitchen and bath catalogues, with over 140 pages in full color. Poggenpohl USA Corporation, P.O. Box 10PA, Teaneck, New Jersey 07666, 201-836-1550. Poggenpohl kitchen and bath furniture manufactured by Fr. Poggenpohl KG, Herford, West Germany.

Circle No. 351 on Reader Service Card
The world puts stress on your buildings—heat, cold, up, down—stress that causes movement, and that made coating buildings a real problem because the coating didn’t move but the building did. Now there’s a coating that moves with structures, and the world. VIP Last-O-Coat “Elastomeric Coatings” —8000 series with 330% elongation—are formulated to meet the dynamic stresses of the real world head on and move with them. They are guaranteed for five full years when applied to manufacturer’s specifications. VIP Last-O-Coat® is available in a full range of colors or can be special mixed. So move with the world... don’t give your building a chance to leak-use VIP—it keeps water in its place.

For a fact file of information about the complete line of VIP Waterproofing Products, call Peter B. Anderson (305) 592-6045 or Dwight Cole (415) 653-9633.

The world puts stress on your buildings—heat, cold, up, down—stress that causes movement, and that made coating buildings a real problem because the coating didn’t move but the building did. Now there’s a coating that moves with structures, and the world. VIP Last-O-Coat “Elastomeric Coatings” —8000 series with 330% elongation—are formulated to meet the dynamic stresses of the real world head on and move with them. They are guaranteed for five full years when applied to manufacturer’s specifications. VIP Last-O-Coat® is available in a full range of colors or can be special mixed. So move with the world... don’t give your building a chance to leak-use VIP—it keeps water in its place.

For a fact file of information about the complete line of VIP Waterproofing Products, call Peter B. Anderson (305) 592-6045 or Dwight Cole (415) 653-9633.

For more information see SPEC-DATA or SWEETS Section 7.9/VI. Call Sweet’s BUYLINE 800 toll free for our nearest representative.
**Gunlocke:** Prelude double-pedestal desk with walnut legs; also available as single pedestal in oak or walnut. Circle 109 on reader service card

**Dunbar:** Adagio lounge seating by Dennis Christiansen includes a chair, a short sofa, and a long sofa. Circle 106 on reader service card

**Paul Hanson:** Imported large-scaled heavy glass includes swirl glass vase, cylinder, pitcher, and ring-neck vase. Circle 110 on reader service card

**Gravely Furniture:** Decorator wall clock of pine has quartz movement, step second hand, Roman numerals, convex glass, and brass bezel; diameter is 14 in. Circle 108 on reader service card

**Haworth:** UniGroup open office interiors combine with TriCircuit ERA-1 panels to create reception areas, work stations, word processing areas, and similar spaces. Circle 111 on reader service card

**Forms + Surfaces:** Fire-retardant bonded wood and tambour, with Class I flame-spread classification, comes in red oak, white oak, teak, or walnut. Circle 107 on reader service card

[Continued on page 58]
Poor Leo... His boss tried to outguess the future. And the future happened two weeks ago...

Harvey Probber had no crystal ball either. So all Advent III open plan workstations were designed with unrestricted wire management. Fully concealed. Entirely accessible. Infinitely expandable...

So bring on 'The Third Wave,' Alvin. Even the 'Fourth.' Send in the video conferencing, the word processing, the optical scanning, the laser pencil sharpener. All the electronic goodies that are sure to come along. We're ready for them. Probber can manage them easily. Beautifully.

Probber builds, assembles, wires and tests each workstation cluster in our factory—not your client's office—and delivers furniture, not erector sets. If you are not entirely familiar with Advent III, our open plan furniture system, write Harvey Probber Inc. 44 Probber Lane, Fall River, Mass. 02722.
Before you specify windows, there's an extraordinary energy-efficient blind you should know about. The new Levolor Cryotherm Blind.
Heat-absorbing black on one side, bright metallic on the other side. Cryotherm Blinds by Levolor help heat or cool a room like no other blind made. They mastermind the energy problem simply, beautifully, dramatically. To learn more about this newest natural wonder for the windowed world, write Levolor Lorentzen, Inc., 1280 Wall St. West, Lyndhurst, New Jersey 07071.

Circle No. 342 on Reader Service Card
**International Contract Furnishings:** Luigi Massoni-designed Glacé series modular kitchens have doors and panels of wood veneers or high-gloss colors.
Circle 113 on reader service card

**Koch + Lowy:** The Floor Touch lamp, designed by Peter Hamburger, turns on with a touch—dim, medium, bright, then off. Available in solid brass with pleated beige shade or polished chrome with pleated white shade.
Circle 116 on reader service card

**Hickory Furniture:** Designer's Choice chair of Oriental derivation is part of a collection; the chair base will also be offered as a bench.
Circle 112 on reader service card

**Knoll International:** Articulated chair in high-back and low-back versions, designed by Niels Diffrient, is covered in leather and has urethane foam arm rests on tubular steel arms; five-prong base is painted.
Circle 115 on reader service card

**Kittinger:** T725 upper wall units and T715 lower wall units of mahogany.
Circle 114 on reader service card

[Continued on page 60]
Owens-Corning sound dividers.
Designed so your design gets noticed. Not ours.

We don't expect people at work to appreciate the classic lines of our sound divider system. They may not notice the handsome fabric covering. Or how beautifully the dividers fit together. They may never see the electrical raceway hidden in the base or the shelf-hanging capability. And they can't possibly know that their privacy comes from our special sound-absorbent Fiberglas core inside each panel.

What they will notice is what really matters: the total landscape you've created.


"T.M. Reg. O.-C.F. ©O.-C.F. Corp. 1978

Circle No. 382 on Reader Service Card
Herman Miller: Burdick Group® office furniture comprises paper handling and storage elements, work surfaces, and electronic equipment supports that can be arranged or rearranged to suit needs.
Circle 121 on reader service card

Krueger: Matrix Tables, companions to Matrix Stack Chairs, have Formica or hardwood veneer tops and tubular steel legs finished in bright chrome or powder coating.
Circle 117 on reader service card

Levolor Lorentzen: Daempa Baffle ceiling is offered in more than 100 colors and bright metallic finishes. Custom panels range from 2 to 10 ft in length.
Circle 119 on reader service card

Nanik: Serré Wood Verticals come in 23 standard stains and are custom cut from solid vanes in 3 1/2-in. or 5-in. widths. Also available is a parquet wood vertical.
Circle 122 on reader service card

La France Imports: La Nature collection of fabrics includes Autumn Leaves in white on rust or rust on white in 100 percent cotton. Coordinated wallcovering is also available.
Circle 118 on reader service card

Lightolier: Toll Series downlighting has seven reflector trims and a Frame-In-Kit for new or existing ceilings, providing up to 50 percent saving in installation time.
Circle 120 on reader service card

[Continued on page 62]
Reed Wallcoverings: Seascapes collection of wallcoverings includes Sea Coral, a fanlike design in russet by Cindi Mufson. There are coordinated fabrics.
Circle 124 on reader service card

Harvey Probber: Mayan sofa, a sculpture for seating, is available covered in fabric or leather.
Circle 123 on reader service card

Sunar: Lounge chair from the Petitt collection is upholstered in leather or fabric over molded polyurethane foam on a steel frame. Base is die-cast zinc with chrome finish.
Circle 127 on reader service card

Shelby Williams: Stacking chair 5397 has foam-padded seat and square metal tubing frame finished in bright chrome or polished brass.
Circle 125 on reader service card

Albert Van Luit: Spring Bough wallcovering is a four-panel scenic design of a flowering peach bough.
Circle 128 on reader service card

Stendig: Piediferro Series-S tables, designed by Afra and Tobia Scarpa, come in three heights. Tops are square, round, or oval made of marbles, plastic laminates, or box-grained natural oak for square tables only. Base is cast iron finished in dark gray.
Circle 126 on reader service card
Superior soil-and-stain resistance gives VICRTEX® vinyl wallcoverings 

beauty that lasts

Now, more than ever, the high cost of installation and maintenance makes Vicrtex the #1 wallcovering quality choice.

All Vicrtex wallcoverings are treated with a unique chemical finish that makes cleaning with plain soap-and-water or mild detergent easy and effective. Longevity and, therefore, economy result.

And add these features: strong resistance to tearing, scuffing and impact... a 5-year guarantee against mildew... Class A fire-safety rating, label-affirmed on every roll.

No wonder Vicrtex is the ultimate in vinyl wallcovering beauty... and the hallmark of quality.

Shown: Arno—swatches available.
When You’re Looking for the Perfect Solid Color...

During 1980 ... Wilsonart asked all over
Designers the U.S.

what a contemporary
good, decorative
solid color
line

You should look line.
like.

That’s Wilsonart has great news
why we coming to you believe ...
in March.

Copyright© 1981 Ralph Wilson Plastics Co.
630 General Bruce Drive, Temple, Texas 76501
Manufacturers of Wilsonart Brand Decorative Laminates,
Chem-Surf, Tuf-Surf, Dor-Surf, Metallics and
Contact Adhesives.

Circle No. 375 on Reader Service Card
Two buildings each, by two firms, yield four vivid demonstrations of current architectural potentialities in America.

Imagery, procession, typology, allusion, ornament, response to context—all of the major issues that divide orthodox Modern architecture from today's no-longer-so-avant-garde—are addressed in these four buildings by two firms. Their appearance here in one issue is largely an accident of converging completion and publication schedules (finally pulled together through the efforts of some dauntless photographers).

As it happens, these two firms represent the East Coast and the West Coast. Hardy, Holzman, Pfeiffer & Associates of New York has pursued its iconoclastic design path so long—and produced so many excellent buildings along the way—that they have been named this year's recipient of the AIA Firm Award. Although Studio Works of California has been recognized for outstanding design for over a decade—winning P/A First Awards in 1969, 1972, and other awards in 1972 and 1976—these two buildings are the first they have executed from the ground up. Like HHPA, Works is a true collaboration among partners—the senior ones being Craig Hodgetts and Robert Mangurian.

Besides their adventurous manipulation of forms, images, and colors, buildings by these two firms exhibit a shared concern for the real materials of building. Their designs are not just paper conceptions somehow made real, but are determined in significant part by the components at hand in this industrialized society—their physical and evocative characteristics deliberately made prominent. (For more on materials in design, see Editorial, p. 9.) While HHPA's work expresses an enthusiasm mainly for the hardware of Middle American life (though the partners' cultural interests are far broader), Studio Works reflects a wider range of sources, particularly recent European design explorations and the urban vernacular that inspired them.

The four buildings shown here—also coincidentally—cover a wide range of uses: neighborhood settlement house, corporate headquarters, academic facility, gallery combined with residence. One by each firm is meant to be highly visible and symbolic—though nonetheless quite cognizant of context; the other in each case is meant to fit in unobtrusively among its neighbors. All of them succeed. And all of them do more than that: they show us today's unrestricted, eclectic architectural climate can foster rich architectural experiences—in working, workable buildings. [John Morris Dixon]
The first phase of the new Best Products Company corporate headquarters has recently been completed near a highway interchange on the outskirts of Richmond, Va. The company has long been well known for its unusual catalog showrooms that employ many kinds of architectural and structural devices to entice and delight the retail buyer. With this new building, no such tactics are used, yet it is as unusual for its type as are the earlier showrooms. Following six pages of photographs, descriptive captions, and drawings, the building is then discussed in greater detail on pages 84-85.
Once past the eagles and over the bridge, one enters the spacious lobby (right, left, below left), where the second-floor open-plan offices are treated as a mezzanine surrounding the upper reaches of the space. The open offices are given a feeling of intimacy and warmth by the use of such devices as the small-scaled Colonial "houses" that are used as major dividers, as well as the carpeting, which is designed after a silk-screen of 1977 by artist Jack Beal. Adding to the touch is the floor of the curving walkway (far left and below), where the tile and its pattern remind one of that found in turn-of-the-century office buildings and cafes. Throughout much of the space, the translucent glass block admits a soft, even light that is most complimentary to the well-placed art works.
Eventual additions will be joined to the north and south sides of the building, making it one day a two-story semicircular complex (see plans and site plan). For now, however, the sides are enclosed simply with cement-mineral fiberboard panels. The south façade (left) would look like the back of any small-town movie theater were it not for its length and the auditorium adorning it in the background. Although the use of art has been effectively discreet throughout most of the building, there are places, such as some of the executive offices (below left) that seem to be in need of a little discipline; Arts and Crafts, Art Nouveau, Pop Art, and Pompei defeat each other in the same small space. To explain its architectural antecedents and historical allusions, the company distributes a flyer that enlightens the uninformed about everything, including the connections from the 14th Century to our own.
Best Products Company, Richmond, Va

The owners of Best Products Company have by now become firmly established as genuine patrons of the arts. The Lewises of Richmond, Va, first put their company on the map through the selection of SITE of New York as architects of most of their catalog showrooms, which now make up the largest such retail merchandising business in the country. Along with this, the clients have also recently completed a new showroom by Venturi, Rauch & Scott Brown, and they have had an exhibit of proposals for their new showrooms by six distinguished young architects at MOMA (P/A, Feb. 1980, p. 24). Now they have opened the first phase of their new corporate headquarters building in Richmond, by Hardy Holzman Pfeiffer Associates. When all the proposed portions are eventually added to the present two-story, 68,000-sq-ft structure, the completed facility will house 3000-4000 employees.

In most respects, the new building is quite what one would expect from HHPA, but in some other ways it can be seen as an almost radical departure from much of their earlier work. Specifically, different attitudes can be noticed in the building’s relationship to its physical setting, in its type of organizing device in plan, in the attitude expressed towards the building’s service systems, and in the selection of the particular historical references employed.

The physical setting
The building faces one quadrant of a cloverleaf highway interchange outside Richmond. Although blatant contextualism has never been one of HHPA’s vices, and there was no real excuse for them to pursue it here, there was one eminently sensible reason. By curving the building to conform to the road, and then by building its street façade of glass block, the architects have in fact constructed a most efficient sound barrier for the back gardens. Inside, the glass block acts as a type of shoji screen to give soft natural illumination to the offices, which are visually oriented to the planted gardens and meadows behind the building. The façade also assures a strong image at the front, but this, of course, could have been achieved by a number of other means.

The plan
Many of HHPA’s earlier building plans have made use of the concept of grids in shifted or “cocked” relation to each other. Combinations of the buildings’ other systems, such as furniture, partitioning, or mechanical and electrical equipment, would then rigorously adhere to one or the other of the grids, and thus also function as clarifying devices. In contrast, the Best plan shows only a single orthogonal system (albeit with canted or rotated room “objects” dropped into it), which derives most of its richness and complexity through its juncture with the curving front façade and with the main corridor that follows its arc for the length of the building. This sets up essentially the same type of condition as two shifted grids, but here, because of the curve, the relationships between the two defining geometries are never constant. The curve, which is the element that continuously throws off a permanent relationship between the two, is also clearly the main element that makes this building so much more dynamic inside than many of the others. This condition, which adds to the complexity, paradoxically makes the building easier to “read” once one is inside, since the shifting relationship between curve and grid continually provides a clear sense of where one is within the matrix.

This device works well now, but one wonders if it could become a problem as the building grows. Without the built-in limits inherent in the conventional orthogonal shifted-grid organization, this system, extended much beyond its present (immediately graspable) limits, might by the very nature of its open-ended continuum become disorienting. One presumes, though, that “landmarks,” such as freestanding rooms, will guide the way, as they do already in the first phase of the building.

Building’s systems
In the past, HHPA’s buildings have become well known, even somewhat notorious, for their treatment of the mechanical and structural systems. To varying degrees, different systems of the buildings have been exposed and highlighted both for purposes of decorative effect and as a means to illuminate aspects of the building’s physical organization. At the Best building, such services have been downplayed. Where electrical apparatus or air ducts have been exposed, or where partitioning has been colored, the tones have been kept soft and muted. The strongest color, which is used for the furniture partitioning system, is a deep but calm Colonial blue-green. “As time goes on,” Malcolm Holzman said, “we realize we can do the same things we used to do but with much greater subtlety.” Even though treated in a subtler manner than in the past, these systems nevertheless retain their explicative function.

Historical references
This building, probably more than any ever designed by HHPA, is full of a wide range of historical references. In the past, whenever such allusions were made, they were never given particular emphasis, but were brought along in the baggage of “inclusivism” into which the “bad boys of architecture” put a lot of things to delight and sometimes shock. If anything was given preeminence, it was the

Data
Project: Best Products Corporate Headquarters, Richmond, Va.
Architects: Hardy Holzman Pfeiffer Associates; partner in charge, Malcolm Holzman; project manager, Alec Gibson; Associate; team architects, Neil Dixon, Kala Somvanshi, James Despirito, John Lowery, Dorothy Alexander; construction coordinator, Hilda Lowenberg; interiors, Leah Madrid; project field representative, Randolph Hicks.

Program: master plan and design for new corporate headquarters to be built over multi-year period. Phase I includes 68,000 sq ft of building with 300 parking spaces and property improvements for future development.

Site: twenty-five acres of farmland and woods on plateau 30 ft above an interstate highway intersection and a major arterial road; eight wooded acres will be left natural.

Structural system: a simple one-way concrete-slab system employing fiberglass framework. Where the 24’ x 24’ structural grid abuts the curving skin, varying plan spaces are generated. Major materials: curving exterior of glazed terra-cotta base and cornice with glass-block infill stabilized by 28’-high steel bar joints. Watercourse is ceramic tile and terra cotta. Other exterior walls are sheathed in ⅛-in.-thick cement-mineral fiberglass panels supported by aluminum clips on steel stud system. Interior wall surfaces include gypsum wallboard, cedar boards, aluminum, fabric, vinyl, and glass; floor surfaces include stone, ceramic tile, and carpet.

Mechanical systems: conform to
requirements of 1978 BOCA Energy Code. Air conditioning utilizes four zones; when outdoor temperature is below 55 F, up to 100 percent ventilation cycle is used; lighting includes translucent skylights, energy-efficient ballasts on fluorescent lighting systems, and light distribution luminaires.


Construction manager: McDonough Construction Co.
Client: Best Products Company, Richmond, Va.
Costs: not released by client.
Photos: Norman McGrath.

For some viewers, the Best building is at its best at night when the interior light shines through the glass block, making the luminous structure seem weightless and barely perched upon the ground.

For some viewers, the Best building is at its best at night when the interior light shines through the glass block, making the luminous structure seem weightless and barely perched upon the ground. The partitioning system in the open-plan parts of the office floors is composed of a system of small, linear Colonial "houses," neatly fitted out with desks and task lighting, and with traditional architectural cornices finishing off the top. Besides their allusive quality, however, these dividers also show a particularly successful way of humanizing large, open-plan office space by breaking it down into human-scaled architectural elements. Something else that humanizes the space, of course, is the art and other decorative objects found throughout the building. One of the best things about the art in this building, besides its overall high quality, is that a currently common tendency of including too many objects has been assiduously avoided. With the exception of some executive offices, one feels that the art has been selected and installed with a very careful eye.

The glory of this building, though, and where it differs most from other HHPA works, is on the exterior. It is unlike anything the architects have done before, and even in its present, early state of growth, it could almost be seen as revolutionary in terms of its type. It makes none of the grandiose, sometimes outlandish kinds of corporate-image statements that business executives often seem to favor. Instead, it is serene and quiet, but in its own way makes a most powerful and evocative architectural statement. It could appear as a silent fortress from some past memory were it not for the fact that the entire front façade is constructed in patterned clear and reflective glass block. In front of this, massive WPA-era stone eagles flank a bridge that leads over the moat to the entrance.

At the sides of the building, where future additions will eventually be added, the architects simply cut the building and finished it off like the back of any small-town movie theater. This gesture could be seen as too precious, but in its utter simplicity and lack of contrivance it becomes instead endearing, and above all, admirable in its straightforwardness. The back of the building, which is clad with composition panels clipped to steel studs, is finished in a series of small courtyards and gardens oriented away from the highway toward the meadows.

What this building shows, primarily, is that there are some things corporate headquarters buildings, even those in the beautiful countryside, don't have to do. They don't have to beat the public over the head with tacky and contrived corporate "imaging." Although that is not to say this building does not have an image; it does, but it relates only to matters of building, architecture, and its history. Another lesson shown here is that corporate offices do not have to make use of open planning in conventional ways, but that imaginative applications of factory-manufactured office systems are possible. And finally, they don't have to cover their walls with art or other decoration, as is often the case, for it to have its proper effect, which is the enrichment of the space it is in, and ultimately of those who share that space.

[David Morton]
Raising the roof

HHPA’s new music and dance facility for a New England prep school indicates yet another striking contrast to earlier work, this time in a conservative vein.

Every architectural firm whose work attracts a lot of attention sooner or later finds that forthcoming publicity, commissions, and awards depend on the firm’s ability to “renew” itself. Hardy Holzman Pfeiffer Associates, the enfants terribles of architecture in the late 1960s and soon after officially admitted into the establishment (New York Times Magazine profile, 1977; National Institute of Arts and Letters Brunner Award, 1975), still receives a lot of attention. It still elicits enthusiastic reviews, obtains juicy commissions, and cops prestigious awards (AIA firm Award 1981). But for a few years now some spectators have been watching “the kids” with increasing doubt that they will be able to “renew” themselves. How long will a public think that Butler buildings bashing into each other, exuberantly painted ducts barreling through space, and fluorescent light eerily illuminating a pulsating floral carpet laid on the diagonal are avant-garde? Already HHPP’s trademarks have been lifted by big-business architects trying to spiff up their Miesian industrial parks with brightly painted ducts.

Not that HHPP has pretended it wanted to be avant-garde. It did, however, want to turn around accepted norms, to make certain properties, such as industrialized off-the-shelf components, an accepted vocabulary of architecture. In doing so, the firm took Modernist principles of gridded horizontal spaces and exposed structure and mechanicals and played on their industrial characteristics, jazzing them up, juxtaposing them with outre pop or industrial artifacts, making the whole thing accessible and, well, amusing. They took architecture a step beyond Modernism, but in retrospect only a baby step. And it may well have been towards a dead end.

Both the Best Products Company on the preceding pages and St. Paul’s Music and Dance Building still exploit the basic Modernist vocabulary. However each project hints strongly that the firm is exploring new directions, although, to be sure, different ones. Best Products pursues a flamboyant, ornamental, and historically referential course; St. Paul’s attempts to follow a more conservative line, turning back to vernacular building forms and materials of the past.

Contextual impulses

Many of the buildings on this secondary school campus, gradually built since 1856, come in standard brick collegiate Gothic. When Edward Larrabee Barnes designed a complex of dormitories in 1962, he made certain interesting gestures: during the heyday of Modernism, with its flat roofs and floating glass window walls, Barnes gave his brick buildings gable-like roofs of oiled copper and square windows rotated on a 45-degree angle. HHPP’s siting of its building on the slope alongside Barnes’s dorms and at the rear of the main school building meant all three styles should be kept unified visually.

The most noticeable feature of the building is that it comes in two parts—the music building and dance hall—connected by an underground base containing locker rooms and rehearsal spaces. The resulting reduction of scale was further ensured by placing the two buildings at right angles to each other so that they do not read as simple, repetitive units. Layering the roofs, and inserting the two structures into the slope of the hill also helped. The steeple-like gable roofs, broken by clerestories and the long slung lower roofs
St. Paul's School, Concord, NH

echo the Gothic-style massing of the surrounding buildings with a muteness reminiscent of vernacular schools and churches. The roof shape, which dominates the silhouette, harks back to a vernacular tradition increasingly being investigated by architects in America as well as Europe.

HHPA has handled the interiors of the Dance and Music Building with restraint and favored a tailored crispness of detailing. While the ducts, pipes, joists, and framing members are still revealed, and industrial elements are easily visible, their presence is toned down. Straightforward interior volumes correspond legibly to the building's external configuration. The major spaces in each structure are fairly contained, with an emphasis—particularly in the music room—on the vertical centralized thrust of space upward to the gable roof and the clerestories.

In the nature of materials

The quietly composed character of the building lends it a dignity in spite of the down-to-earth characteristics of minimal ornament, simplified details, and inexpensive materials. The music room attains a richness of 19th-century churches through the use of cedar paneling on walls and sloped ceiling, and the dark Victorian colors for partitions, balustrades, and framing elements. There are moments of dissonance: the mixing of elements like the incandescent sconces mounted on the cedar paneling works well with the metal stairs and steel framing, largely because of the dark Victorian palette used. But the juxtaposition of sconces over the ventilation ducts just looks flippant.

Outside, the copper panels with standing seams surfacing the roofs' broad expanses neatly match Barnes's pitched roofs. At the same time they successfully give texture and scale to the buildings with a durability evocative of slate-roofed churches and a ruggedness of 19th-Century factories. The corrugated cement asbestos panels on the end walls do not come up to that level of association, although references to New England farm buildings are not lost on the observer.

The handling of the brick, however, is another matter. There is no argument about brick being a respectable choice, since it is so generously employed in the surrounding buildings. But whereas the brick of the other buildings is treated as a load-bearing mass or as a continuous plane punctured by windows, the brick in the Dance and Music Building is applied like adhesive tape, coating residual wall surfaces between the layers of roof levels along certain sides of the building. The copper roof reads as a stronger and more substantial material than brick veneer—which it indeed is. The inversion may fit into the preference system of HHPA, but one wants to see a representation of support (brick expressed as a thickened wall), if not actual support (steel frame), under those heavy roofs.

The wallpaper-like quality of the brick is more blatantly stated at the corners where it is sliced off to give way to the corrugated cement asbestos wall. Because the corrugated siding is continuous from top to bottom, except for the horizontal bands of glazing, it does read as a curtain wall—a reading that corresponds to the lightweight, brittle quality of the material. But the corrugated paneling itself would have benefited by being contrasted with a more highly developed wall treatment on the other elevations.

Going beyond Modernism

The kinds of materials and the way they are handled are problems facing many architects right now. In a period that values contextualism, ornament, and historical allusions, architects have to face existing modern technology's own demands. Obviously, present-day technologies preclude the need structurally for older "substantial" materials, many of which are prohibitively expensive anyway. But materials, techniques, and forms all compose an internal dynamic that has influenced their understanding and their appeal. Violation of that dynamic, by a shift of balance that happens when old forms are executed with new materials, warps the entire effect.

The Dance and Music Building goes far to distill certain Modernist principles (expressed structure, exposed mechanicals, curtain walls, and gridded space) and combine them with pre-Modern ones (centralized vertical space, gable-roof configuration) to see what can be extracted from these different modes. It even investigates questions of human scale through working with the massing and the texture of the building rather than by applying ornament—an instance again where current values are accommodated with Modernist measures.

This sort of consolidation between pre-Modern and Modern architectural principles, with its adherence to archetypal forms and industrial vernacular materials, may look conservative at first. But this kind of synthesis is much needed if the faults of Modernism are to be redressed, while its advantages are retained. Even if HHPA has not resolved all the issues—such as the choice and handling of materials on the exterior elevations—their exploration still represents a positive step. This statement holds true not only for their own development, but for the architecture that is still to emerge from this period.

[Suzanne Stephens]
The brick and corrugated cement-asbestos-paneled walls, and the choice of copper roofing for the music and dance structures evoke imagery of barns and other farm buildings. In the music room (right), 38 ft in height, a Victorian color palette is introduced on the gypsum-board surfaces and steel framing. Cedar board sheathes the surfaces of the balcony, the upper ceiling, the floor, and the stage. Sconces, molding, other millwork, and even the wood Shaker-style chairs further the associations with the past. The exposed frame, ducts, metal stair, and balustrades, however, derive from the industrial vocabulary for which the architects are so well known.

**Data**

**Project:** Dance Studio and Music Performance Hall, St. Paul's School, Concord, NH.

**Architects:** Hardy, Holzman, Pfeiffer Associates; Norman Pfeiffer, partner in charge; Harris Feinn, John Chimera, project architects; Neil Dixon, Brian Principe, team architects; Hilda Lowenberg, construction coordinator; Leah Madrid, interiors.

**Client:** John Beust, St. Paul's School.

**Site:** hillside in center of school campus at rear of main building.

**Program:** one building (in two parts), 17,024 sq ft for 200 students. Dance hall, 7652 sq ft, has locker facilities; music building, 9328 sq ft, includes ten practice units plus performance and practice hall.

**Structural system:** structural steel frame with metal deck and concrete floors; concrete block and brick infill.

**Major materials:** reinforced concrete, steel, concrete block, brick, corrugated cement asbestos panels, gray-tinted glass.

**Mechanical system:** steam-heated, ducted warm-air system with hot-water baseboard at perimeter spaces.

**Consultants:** Le Messurier Associates SCI, structural; Cosentini Associates, mechanical; Jaffe Acoustics, Inc., acoustical; Jules Fisher Associates, theatrical.

**General contractor:** Louis E. Lee Company.

**Cost:** $1 million.

**Photographs:** Norman McGrath except as noted.
A neighborhood center designed by Studio Works is an agglomeration of evocative spaces and images, meticulously executed in tough materials.

Founded at the turn of the century in a working-class area of Columbus, Oh, the South Side Settlement previously occupied a building complex it had accumulated piecemeal. In the mid-1970s, the organization began a campaign for more adequate new facilities that might also encourage revival of its neighborhood. A wide architect search led them to Studio Works, a Los Angeles firm once based in New York.

The first design that Works gave them won a P/A Award (Jan. 1976, pp. 62-63), but by the time of construction, the program had to be scaled down. The final, totally revised scheme is little larger than the earlier quarters, but carefully attuned to present and future needs.

The completed facility looks, from outside, like a cluster of structures at the scale of neighborhood houses. A more monumental, community-scaled image can be seen only from the internal court (photos opposite). Only from there can one see the classically composed “house” at the core of the complex. Wings of loftlike space flanking this core contain functions that can be reassigned as programs change. The whole is meant to be perceived as “the domain of many proprietors over time, rather than of a single contemporary one.”

Materials and details are meant, literally, to survive 100 years of hard use and, figuratively, to express the original settlement ideals of hard work and integrity. Simple mechanical provisions include no air conditioning, even in the clinic portion.

Specific features are described in captions. Design ideology, related to current European ideas, is discussed in a critique by Mark Mack (pp. 84-85). [John Morris Dixon]
Corner view (right) shows house-scaled building forms that part at entrance to courtyard (below). Walls of filled concrete block are largely clad with cement-asbestos board over expanded polystyrene insulation. Exposed block, striped in two tones, calls out central block. Galvanized steel appears in links between core and wings and in columns of concrete-filled spiral-ribbed galvanized tube.
Symmetrical façade of central block (above) faces down axis of courtyard toward false front that masks silhouette of theater block (above right). Classical formality is maintained in flanking walls with balcony windows centered over paired columns. Court is to be paved, and stair designed by sculptor Alice Aycock will, if executed, lead up to balcony at theater end. Curved wall of recess there is one of three (plans below) that match curve of vault over core block. Plans show gym, central area, court, and theater on long axis, flanked by less specialized spaces to north and south, with entrances on cross axis. Circulation is planned for interaction, not efficiency. Gym (top, opposite) is also major gathering place. Conceived as a court, roofed with pre-engineered structure, it has grand stair-platform-bleachers, executed in particle board, at base of core façade. Central area (bottom photos, opposite) mixes circulation with activities such as eating near fireplace. This block is seen as a regular form "altered" by insertions such as angular stair, with nonconforming steel structure painted blue-green. Insulation inside block walls and applied to exterior allows block to be exposed inside; flush joints, meticulously crafted, domesticate wall surfaces.
South Side Settlement, Columbus, Oh

Data
Project: South Side Settlement, Columbus, Oh.
Architects: Studio Works, Venice, Ca (Robert Mangurian, Craig Hodgetts, architects, with Marianne Burkhalter, Heather Kurze, Frank Lupo, Audrey Matlock); Feinknopf, Macioce & Schappa, Columbus, associated architects.

Site: flat, 100' x 310', with streets on three sides, in residential area.

Program: diverse recreation, day-care, athletic, meeting, and medical facilities; central area, entry, offices above, 2500 sq ft; north wing loft areas for program, staff offices, work areas, 6750 sq ft; south wing loft area for clinic, 3250 sq ft; gym and showers, 4250 sq ft; performing/meeting space, 2250 sq ft; penthouse children's art gallery, 1000 sq ft; shop, 800 sq ft; electrical/mechanical, 300 sq ft.

Structural system: concrete block bearing walls with pilasters; precast concrete beams, floor, and roof members; steel roof structures over gym (pre-engineered) and performing space (custom).

Major materials: exposed structural materials, concrete floors, expanded polystyrene insulation, cement asbestos board cladding, pre-engineered metal roofing, aluminum windows, poplar woodwork, particle board.

Mechanical system: gas-fired baseboard hot-water heating for central and loft areas, hot water exchange air systems for gym and performing space.

Consultants: Kurily & Szymanski (structural), Sullivan & Associates (heating and plumbing).

General contractor: The Gardner Co.

Costs: $1,050,000 (1980, actual); $46 per sq ft (building + ½ area of courtyard); costs not including furnishings or fees.

Photography: ARTOG.

Second floor of core area (top) is designed as series of bridges and platforms, piercing bearing walls of core and leaving light wells over first-floor spaces. Typical program spaces (above left) have storage islands that open to work spaces by particle-board panels with mason's trowel handles. Simple custom light tracks can accept shielded incandescent or fluorescent tubes. View from northwest (left) shows parking side and raised electrical room that marks back entrance (above).

Drawings (opposite) show (top to bottom) cross section through theater, with electrical box superimposed, section at core, detail of track lighting, and elevations around courtyard.
Critique

The South Side Settlement by Craig Hodgetts and Robert Mangurian glistens in the polemical twilight of an era in which architecture is constantly redefined. While certain popularity in American architecture is guaranteed through historicist and eclectic allusionism, the more abstract "analogue" architecture of the South Side Settlement has established its own popularity with its users and neighborhood.

Barbara Stovall, director of the Settlement, commented after moving to the new building: "...it feels like I have been here before." Invoking memories of space, building types, and urban building elements is one of the main principles of La Tendenza (Italian Rationalism). Like Rossi's analogical architecture, South Side's design ranges between inventory and memory, using abstract and familiar building elements from historical and vernacular architecture.

Although the architectural implications of the South Side are rational, still tending toward Modernist and moralistic values of material and invention, another comparison falls into place. Herman Hertzberger's Central Beheer Building in Apeldoorn, Holland (P/A, March 1980, p. 98), is a "city within a city," and its unfinished qualities are intended to encourage a spontaneity amongst its users without returning to populist or vernacular eclecticism. Central Beheer and South Side succeed in their negation of mechanistic provisions for flexibility à la Centre Pompidou, and both express a hybrid between the antitechnocratic attitude of the Rationalists and the modernist purism of Team 10. It is apparent that South Side is foreign to the Middle American setting of Columbus not only by comparing it with European examples, but also by noting the reactions it draws from the local architectural community, who see the building as out of context there.

The myth of contextuality

The recent interpretation of contextualism in America involves imitating or referring to what is around. And "around" means the pluralistic elements of architecture, confused and contaminated by ornamental, expressionistic, and sentimental values.

The abstract qualities of contextualism practiced at South Side allow a new, exciting architecture which does not depend on any current fashionable fad or ideology. Although both laymen and architects are impressed by the instant gratification brought on by the new ornamentalism and eclecticism, the ideas of contextualism contain a far higher potential: the creation of an architectural culture expressing popular and refined values alike. Without analyzing the potential of contextualism through serious research, and without prototypical and large-scale architectural demonstrations, the Post-Modern revolution remains another elite vehicle for architects to gain popularity.

The history of the Settlement

While Post-Modernism has sought its identity in the resurrection of images from the past, the architecture of the South Side Settlement Center has its identity in the political past of its movement. Liberals and the church created settlement houses in the 1880s in order to share their cultural resources and to live with the poor. Before branch libraries, playgrounds, and opportunities for the poor to see cultural events, settlements provided classes, clubs, outings, and kindergartens. Most settlements served immigrant populations, offering, for example, English classes and lodging for migrant workers. Some sought to integrate the new population while others worked to retain the culture of the new arrivals. Today their goals have not changed, but their methods have. They work for community change and towards solving community problems rather than community service.

These goals were difficult to achieve in the old, rundown, unsafe building South Side Settlement occupied. After deciding to build, they were eager to create a building which "ought to reflect who we are socially, to concretize the abstract ideas" (Barbara Stovall).

The staff and the board of the South Side Settlement Center were architecturally innocent. David Tritt, a VISTA architect working with them, slowly educated them about their needs, programming, and architecture itself. They went on field trips to Columbus, In, to see architecture which might suit them. When they were finally ready to look for an architect, they knew what they needed. After interviewing local and national firms, they were pointed toward the Children Learning Center in Brooklyn by Studio Works (P/A, Nov. 1973, pp. 106–109). They found its architects closest to their own boldness without clinging to any particular kind of architectural expression. Committed to the ideas and process and not to the stylistic clichés, the architects came "to the town and stayed for about six weeks" the first time they arrived. They "lived in houses and got to know the people" and worked as a team, an approach very compatible with the structure of the Settlement. Their small firm made it possible to be "involved in the innovative exploration of central issues and ideas of architecture as opposed to the business of making buildings" (Mangurian).

After the design for the building was unveiled, it won a design award in Progressive Architecture's Awards program of 1976. The scheme consisted of six parallel running "superstructures" with interwoven architectural order. Adapting the ideologies and symbolism of late Modernism and the abstraction of functional ideas, this scheme had to be abandoned after fund-raising fell short of the original goal. After futile attempts to cut down the size and the cost of the project, the architects went back to the drawing board to design a new building.
The second time around
They emerged with a building capturing all the criteria the client set out for them: A building that transfers the concepts and abstractions of the settlement ideas, political as well as cultural, into built form. A building that opens new doors of perception to the users. A building that fits into the neighborhood. A building that makes sense.

The first scheme resembled a late 1960s mixture of architectural process and flexibility through superimposed infrastructure and high-techism. Comparing the first design to the second, Barbara Stovall now calls the former "abstract, cold, and too architectural."

The present scheme, dating from 1977, embodies ideas about architecture that emerged in the late 1970s. Even though the plan is similar in the two designs, space is made quite differently. The new sensibilities are related to work then becoming known in Europe—the Krier brothers' efforts to reconstruct cities and Aldo Rossi's analysis of traditional urban typologies.

Users and neighbors alike refer to the building as "fitting" into the neighborhood. The fit is achieved by massing rather than detailing; none of the buildings in the complex is bigger than a regular neighborhood house. The choice of detailing—unfinished concrete block, asbestos boards, and standard windows to the streets—creates an atmosphere that echoes the neighborhood pattern of detailing without using materials like wood siding or brick veneer. The grayness of the materials and the hierarchical organization of the building refer to the add-on, homemade architectural environment of the South Side.

The contextual fit is not, as in so many Post-Modern examples, achieved by simulating elements of the neighborhood, but rather by abstraction and simplification of building types and masses indigenous to this particular neighborhood. It is the usage of the type that enables architectures of different eras and ideologies to form a coherent architectural culture. What Quatremière De Quincy, a French critic of architecture, wrote around 1800 in his Dictionnaire d'Architecture applies again today: "...Type presents less the image of something to copy or imitate completely, than the idea of an element itself to serve as rule for the model...everything is precise in the model while everything is more or less vague in the type."

A city within suburbia
On a residential site, two blocks from a supermarket and other urban remnants, the buildings are marked out on the ground as masses of different functions. The clinic, the gymnasium, the workshops, the theater, and the central administration building with kitchen are housed in distinct, separate buildings. Bearing different meanings to the community, they can be entered individually. The theater, the most public part, pronounces its separation by tilting away from the symmetry of the complex to invite the access from the corner. There are two main entrances for everyday use, one formal for the clinic and one informal, in effect a back door for the community center.

The massing follows a careful typological analysis. The clinic and workshops are identical slabs of one- and two-story buildings, almost like city walls, acting as perimeters to the north and south. The house of administration is the hearth of the place and divides the space between the slabs into two courts. It houses the community kitchen and dining room and is the center of all activity. The western court is covered over to serve as a gymnasium, while the eastern court is left open to the air.

The missing stair
The case of the missing stair is the only indication that user need, client perception, and the architects' values are not always coherent. The architects attempted to transcend their own role by proposing Alice Aycock to provide an idea for the stair. Funding was received from the NEA and the Ohio Arts Council to realize an important attempt to integrate art into architecture. Aycock's first design, a subterranean sphere and shaft 40 ft deep, was rejected by the board on technical grounds (water table). Her second design, still featuring the sphere, this time above ground, was approved by the board of directors, but indecision and its low priority for the functioning of the complex has hindered its realization. While Aycock's symbolic, mystical, and primal conceptions may be hard to accept for the already nonconformist architecture of the settlement, they should not be separated from the idea of the building itself. Completion of her work is essential to convey this innovative merger between art and architecture. At the moment, the gaping mouth of the theater entry hovers symbolically over the courtyard, waiting for its bridge to life.

While the plan and the circulation reveal an "intelligent and thoughtful building" (Stovall), it is the appearance of the complex that divides the spirits. Young people see it as a castle full of adventures, blue-collar workers identify with the unorthodox shape and its unfinished quality, while white-collar citizens and architects have difficulties accepting the unslick reality. The non-status building exhibits an unexpected array of building materials and finishes: glossy, oversized wood for windows and doors; sheet metal; structural steel painted turquoise; asbestos sheathing. The building elements and materials suggest a hybrid consciousness of 1970 high tech and 1980 primitivism. One proliferates the fading machine age, while the other commemorates the return to craft and traditional building methods.

The South Side Settlement is an important example because it touches forthrightly on so many issues of architectural theory and practice today, unlike the pluralistic interpretations of Post-Modernism, which obscure them. Seeking a redefinition of architecture, Hodgetts and Mangurian have created an architecture based on instinctive belief in social and cultural harmony in the environment.
Barbara Goldstein

Studio Works has designed a rationalistic but mysterious residence and art gallery that is both hard and soft, positive and negative.

From the outside it looks almost ordinary—yet strange, ominous, and blank. The labored symmetry and the calculated precision of its fabrication both indicate that this is not a casual composition, a building for a factory or studio, like a painted out palimpsest of grocery store front. The architecture is intentional, classical, yet mysterious. Its noninflected stucco surface only hints at its secrets. The minimal rectangular indentation, framed centrally by doors, cornice, and drainpipes, begs to be completed. It is so neutral it will be passed a thousand times without a glance, yet the mystery remains.

The rear alley façade is radically different but just as consciously composed. A carefully planned mess, it creates the impression of an adolescent tossing his hair in a car mirror. Every kink is intentional. A porch hangs out here, balanced by a chimney there, and this seemingly ad hoc appearance is a knowing retort to the funkiness of the neighborhood. The composition is precious; every move was planned, with little left to chance.

This building was meant to present the tough, masculine appearance of the strong, silent type. The client specified a fortress with no windows facing the street. He worried about security in this transitional, crime-ridden neighborhood. He did not want to call attention to himself or the building. But the exterior is only half the story: beyond the blank, forbidding public face lies a lightly-bathed collection of feminine interior spaces.

Palazzo Gagosian is the name that Studio Works chose to call it in the early sketches. Influenced by Robert Mangurian’s fond memories of Italy and Craig Hodgetts’s admiration for his mentor James Stirling, the building is crafted as though it were a gradually accreted fragment chipped from a dense urban composition.

The design did, in fact, specifically evolve from the particular requirements of its site: the spiritual and formal context of building in Venice, and the restrictions imposed by building codes. Fire regulations determined much of the form: the residential section had to be set back from adjacent buildings; window types and sizes were prescribed, as were three full sets of stairs. It was also necessary to provide a loading dock, four parking spaces and wheelchair access through the site.

The program itself was complex, requiring great flexibility. The client, an art dealer, needed a gallery, an apartment for himself, and a small, independently accessible suite that would be used for a variety of functions. Each area was to be mutually exclusive.

For these reasons, the architects claim the context created the design; that this was an ‘automatic building’; that the envelope and plan evolved from the elaboration of a predetermined diagram. Their job was simply to ‘style’ it, to ‘straighten it out.’ Coyness aside, though, the conscious craft shown here is central to the architecture.

Basically, the building has a linear plan with symmetrically disposed spaces. The most dramatic space is the one ‘that’s not there’—the rotunda—a large circular volume in the center of the second floor. This acts as the building’s eye and lungs, and it is here that all wandering comes to an end. There is nothing at the center.

The rotunda typifies the architects’ precision and love of detail because in the end it does not feel like a negative space, but an elegantly proportioned room opened to the sky. It is modulated by a sequence of punctuations rising from floor to ceiling: first a series of doors and door-sized openings, next a row of windows, and finally a row of clerestories. One can circulate around the space underneath a partial arcade, or one can address it from a carved-out pulpit. It is the eye of God, and the placing of man in the center exemplifies the architects’ philosophy.

The rotunda has archetypal strength, and as a symbolic void recalls related types, such as the Pantheon and the Colosseum. A rotunda was also used much closer to home, however, at the Mission Inn in Riverside, another intended urban agglomeration. The negative cylinder has also fascinated James Stirling, who used it in his Dusseldorf museum design. Whatever its origins, though, the central space in the Gagosian complex is the most powerful image in the building. Most of the other rooms recede in importance compared to it.

Movement through the building is treated as a major spatial and perceptual event. The architects emphasized the linear upward movement by meticulously engineering the lighting and the fabrication of the stairways. The material of the stairs is changed from steel decking to wood halfway up, underlining the transition from public to private zones. The modeled wall above the staircase continues stepping up, extending the visual climb.

The slight insistence of natural light in this building is an achievement, and yet it is ma-
Manipulated with complete confidence and technical command. For example, although the entry passage is dark and mysterious, the end wall of the gallery is washed by a thin shaft of natural light that filters through a slot created by the second-floor setback. The outside wall of the living room is perforated by a stepped series of windows, which in late afternoon create a tracking pattern of light across the polished living room floor.

One impressive aspect of the building is the way the architects manipulated materials and forms to create a classical language, without once resorting to pastiche. The truth is there, the decoration is there, but it's stated in a language of common, readymade parts. The gallery ceiling, for example, is a highly articulated and symmetrical pattern of beams, decking, and ducts. Necessity is the mother of ornament.

Sometimes the use of ornament is intentionally ironic. The Jacuzzi tub in the bedroom is shaped like a raised Greek cross with rose-pink plastic laminate-covered stairs leading to it. It is on axis with the rotunda and the pulpit beyond. This is the ritual bath and sacrificial altar. Above the tub, a dropped cross in the ceiling reiterates the theme. The entire bedroom is symbolically forbidding, clad with hard, cold materials.

There are certain inherent contradictions arising from such detailing. Here, as in their Settlement house in Columbus, Oh, the architects have used many devices—such as openings that frame the figure to create a sense of proportion—to place man in the center. The first and most obvious example of this is on the Market Street front, where the bowed window of the second-floor office is set back from the cut-out façade, thus creating a formal minstrel gallery overlooking the street.

Concurrent with this concern for placing man at the center is the building's technological imagery. The details and choice of materials imply an anonymous institutional quality, a machineline, neutral aesthetic.

The constant dialogue between the hard, masculine image of technology and the feminine qualities of form and modulation is in fact the building's real strength. This is a building that symbolizes humanity; it is male and female, hard and soft, positive and negative. And perhaps a bit imperfect.

---

Data

Project: Larry Gagosian Gallery, Venice, Ca.
Architects: Studio Works: Craig Hodgetts, Robert Mangurian, architects, with Frank Lupo and Audrey Madlock.
Site: a 30' x 85' flat site with frontage on street and alley, flanked by storefront buildings, one-half block from beach.
Program: two downstairs art galleries of 1200 and 500 sq ft; 1700 sq ft of living space above; 400 sq ft of covered parking for four cars; 350-sq-ft private courtyard.
Structural system: concrete block and structural steel stud bearing walls; metal deck with concrete and wood joist floor and roof system; miscellaneous steel columns and beams.
Major materials: stucco and smooth concrete exterior; gypsum board interior with tile, granite, and marble trim; wood floors; concrete floors in gallery; metal and wire-glass windows.
Mechanical system: forced air, gas fired.
Consultants: Ismail Wagner, structural; Sullivan & Associates, mechanical.
Client: Larry Gagosian.
General contractor: F and G Construction.
Cost: withheld at request of client.
Photography: Tim Street-Porter.

Inside (facing page), the bath (middle) takes a highly ritualized appearance, while the kitchen (bottom right) echoes the rotunda's form. A stair (bottom middle) leads nowhere, and in the studio (bottom left) illumination is aided by skylights. The rotunda extends into the living room (top photos).
The Bauhaus always taught that a designer could design anything from a spoon to a city. We have our reservations about some of the cities that have emerged from this idea, but closer to the spoon end of the continuum, there have been notable successes.

Collected here are three of what we call interventions: projects that are insertions into something larger. These projects have to do not just with adding on, but with manipulating the perception of what is already there. Taft Architects’ Hendley Building is a refurbished 19th-Century office building, onto which a slot of “modern” space has been added. The slot not only provides a space in which the required technological equipment—ventilating, plumbing, wiring—can be slipped without disturbing the Victorian interior, but does so in a way that fixes the original in time. Frozen and heightened in intensity by this figure-ground juxtaposition, the ex-Cotton Export headquarters no longer operates as another piece of Old-Galveston-commercial backdrop.

Similarly, Steven Holl’s alterations to an advertising agency’s offices in a rambling clapboard house in Southern New Jersey alter the way in which the house sits on the street and, especially, the alleyway behind. George Baird’s intricate manipulations of the front and rear of a semidetached house in Toronto recall the home’s original porches while leaving no doubt about their subsequent amputation and replacement.

In any case, we are rescuing a scale of architecture that is rarely considered for publication. It is a scale that often falls prey to the argument that smallness is tantamount to insignificance. “How many people will really be affected?” is the question aggressively put. P/A has long been on the other side of this argument—as part of a perpendicular grid, and suggest—with the non-materiality befitting a ghost—the former front porch.

These details are meticulous. The “stop sign” at the end of the drive, for instance, juxtaposes masonry, polished granite, metal framing, wire mesh, several colors, and contradictory geometrical propositions, yet remains spare and delicate. Each detail stands physically aloof—not an outgrowth but an intervention. [Nory Miller]
With small interventions, Steven Holl establishes a firm piece of urban grid out of a loosely organized assemblage of adjacent originals and later additions.

**Good fences**

Robert Frost's "good fences make good neighbors" was written with baleful irony, and Frost was not very subtly rooting for the gremlin of decay, the "something there is that doesn't love a wall." His was an attitude born from open meadows, apple orchards, and stands of pine, a rural sensibility, yet also the basis of many American suburbs and small towns. What Steven Holl is stating in this small addition and remodeled storage room for a hardly larger 19th-Century house is the urban case. It is the case for walls, hard edges, straight lines, and emblematically simple organizations.

Holl has collected his ideas about American building configurations in urban settings in a pamphlet entitled "The Alphabet City," published last March. In it he analyzes the types of grid patterns that were imposed on American cities and the building plans that developed in response. The plan's resemblance to Roman letters suggested the title. Consonantly, Holl's Millville addition transforms a 19th-Century house plopped in the center of its lot with a haphazard extension on the rear into a modified alphabet letter. The addition (also at the rear) captures the sunny backyard and makes of it an interior courtyard with a hard edge to the alley. It makes entering from the parking lot across the alley a clear, even ceremonial procession.

The addition itself is quite small and hovers ambiguously between an "L," a "U," and an "O." There is a definite zone of workspace added to the rear of the house, a definite projecting wing, a parallel wing (that may or may not be added later) implied by a roofless aedicule and a back wall with gate.

The forms are abstracted, sheathed in stucco, and inflected subtly by the darker white and smoother texture of cast concrete sills and cornice. Color is provided by pinkish red pavers—a walkway from the back gate through the aedicule and down the side of the house to the firm's main entrance (the front door is not used)—and by the lush green of the courtyard, accent by the green-painted metal gate. Square-cut windows provide a rhythm to each wing and views onto the courtyard (and an orienting view of the alley at the back). The courtyard is filled with white trellis of grapevines and rose bushes. In summer, a picnic table is the employee cafeteria.

Despite obvious contrasts—shed to flat roof, clapboarding to stucco—the addition blends rather well. Partly this is a function of color: white next to white with accents of red and green (a brick chimney and green shutters in the original house). Partly it is a function of scale. The whole complex is very small. And what contrast there is is modulated. From the back there seems not to be a juxtaposition, but a series of steps from trellising, to addition, to earlier addition, to house.

At the same time, the addition has a quite different architectural quality. The house—an Italianate Gothic Revival once owned by Millville's first family—is pure American Victorian. The addition is more in the spirit of Mycenae or Cordoba or the Inca ruins of South America. The aedicule particularly, formed with an attention to perspective views, has an evocative presence that one suspects only in its simplicity eludes the question of anomaly.

**The corner drugstore**

The interior of the addition was arranged by its occupants, but in another part of the complex—a storage room that had once been the drugstore next door—Holl was asked to make his second intervention. Though quite different in mood, it is equally founded in Holl's ideas about urban gridding.

The long room is arranged like a small-town Main Street. Five offices, separated by shoulder-height walls, open off one side of a corridor, each with its own "shopfront" façade. There are variations in openness and geometric pattern, and each façade has a different pastel hue painted within the rims of its punched openings. Some of the variations carry clear graphic messages, such as the grid of one façade in which only the windows over the door opening have slight frames. Others give clues to the function of the space inside, whether private office or general supply room. Providing order is a rigid design framework within which the variations occur.

"Before I built a wall," wrote Frost, "I'd ask to know what I was walling in or walling out ..." In Millville, Holl is walling in amorphous in-between space and making it usable—individually as offices and collectively as courtyard. [Nory Miller]
A new zone of contemporary technology reconstitutes the usefulness of another grand old structure on Galveston’s The Strand, with interesting implications for architectural time warp.

Data
Project: Hendley Building renovation and addition, Galveston, Tx.
Site: 44' x 110' plus 5' x 110' strip of adjoining property.
Site. 44' X 110' plus 5' X 110' old structure on Galveston's A new zone of contemporary Galveston, Tx.

Neither separate nor equal
By sensitively attaching what they describe as a "pacemaker" to a Victorian commercial structure in Galveston, Tx, Taft Architects of Houston were able to give continued life to an old building. The adroit solution converted a building structured in 1859 for cotton exporting into offices and exhibition area for the Galveston Historical Foundation, without compromising its integrity.

The foundation had purchased the Hendley Building on Galveston's famed The Strand in 1968, to halt its demolition. In 1977, the foundation decided to move its own offices there. There was a difficulty, however. The adjacent building had been demolished in the 1950s, according to foundation executive director Peter Brink, and the Hendley Building's exposed wall had deteriorated badly, bowing out 10 in. A structural engineer advised that to save the building, the wall would have to be rebuilt or buttressed, operations of apparently equal cost.

The foundation commissioned Taft Architects, whose previous work on The Strand (P/A, Nov. 1978) had been well received, to examine the possibilities of adapting the building to its use, by adding the necessary services such as heating, air conditioning, toilets, storage, and secondary exit stairs not included in the original program. Taft devised a structural solution and turned it to architectural advantage. A 5-ft-deep by 100-ft-long truss buttress system holds all the new requirements within its three stories. The existing interior remains unchanged.

The architects inventively related the new structure to the old through scale and color, and the pattern of columns also gives needed scale. It is expressed on the new façade in two ways: either directly where there are no infill panels or by scoring the flat stucco wall where it hides the columns. Additional modulation in scale is created by the exposed stair with landings at each floor. Taft was inspired here by the "ghost effect" of the stair that was left when the adjoining building was demolished for a parking lot.

The color scheme came out of the architects' study of Victorian color, which used a dominant color with its complement for trim. The color here is a reversal of the original. Where the old building has gray granite with green trim on the windows, the new structure is almost all green with gray accents. The exposed stair wall is covered with tile in a checkerboard pattern of red—from the brick front of the Hendley Building—and brown—from an adjacent icehouse.

Having restricted the new elements to this one area, the architects were able to maintain and restore the essential character of the existing interior. Cast-iron columns are left exposed, and low, movable partitions are used to give privacy to individual offices. On the first floor, an auditorium is separated from the exhibit space by freestanding walls.

"We didn't want to mimic the old," said Taft partners, "but rather to reinterpret it with sympathy and harmony." This they have done, and with great style. There is no mistaking that one part is from the 1850s and one from the 1970s, but unlike too many such projects these days, the new respects the old and enhances it. [Carleton Knight III]
The new elevation (top) subtly reverses the color scheme of the 19th-Century façade (above) and less subtly explodes the scale of architectural gesture. Left: a detail of the interior.
Now under construction in Chicago, a state office building attempts to bring together diverse elements of technology and image. For a building that is just in the early stages of construction, the State of Illinois Center has already prompted a quantity of speculative printed words. Designed by Helmut Jahn in a joint venture between C.F. Murphy Associates and Lester B. Knight & Associates, the scheme has very ambitious goals and risks controversy to attain them. It is an amalgam of technology, image, urban design, and historic symbolism. The relatively low—17-story—building centers around a rotunda atrium 160 ft in diameter that projects through the roof to end in a truncated cylinder. Intended to represent a "modern day

Jahn's early conceptual sketches indicate thought processes ranging from a concern for contextual and historic implications to image and orientation studies. Energy aspects are addressed more in the mechanical functions than the formal expression. A thoroughly resolved system of control and mechanical considerations includes ice storage and computer monitoring and operation. Using a DOE-2 program, Murphy-Knight's design engineers estimate that building annual HVAC load will be about 45,000 Btu/sq ft.
"dome," the cylinder crowns a structure that is at once monumental and approachable; governmental aplomb seems comfortably combined with openness and celebration.

All of these attributes are, of course, intentional. Jahn has set out to embody a rich panoply of images, and the sketches that are included here show but some of the thought behind the final form. In striving to reinforce the urban "canyons" along Lake and LaSalle Streets—north and west, respectively—the design calls for the building to pull itself up to full height at the lot line. Part of the Clark Street façade (east) also comes out to the sidewalk, although it steps back in three major segments with a base and a top before sweeping into a robust curve. The arc rotates the 90 degrees through southeast to west, ending at the LaSalle junction with Randolph, forming a large, inviting plaza.

Other contextual goals, according to Jahn, were the attempt to embody governmental and monumental feeling while respecting the scale of the city/county building and contrasting with the Civic Center. While model photos collaged with site views give some idea what the result will be, its degree of success cannot be fully evaluated until the building is in place. Other aspects of the design which are key to the intended effect are more directly concerned with technology and the translation of materials into imagery.

It is on this level that the design dares the most, that it depends so heavily. Glass plays the major role, in fact plays several roles. For that matter, if it is built as designed, the building may combine more—and more imaginative—uses of various glass products than have been assembled before in any one building. There is the obvious use as building skin and skylight. But even the obvious is enriched by the fact that Jahn has called for a spectrum of glazing colors including clear, reflective, blue-gray, gray, and white. In all, the design calls for some 18 varieties of glass.

Glass and stone play games with each other on the base two floors, and it is these walls that delve fully into imagery. The 300-ft-long west arcade façade, built of stone in two colors, expresses a repeated keystone design. As the arcade reaches the west entry, it slips behind the columns, and the entry keystone is expressed in glass. When the stone arcade reaches the junction with the curved southeast wall, it seems to develop an inertia and

On north, east, and west façades, alternating 2'-6" vertical strips of glass will be reflective or opaque. The curved wall on the southeast (left) is a combination of clear and reflective. Stone at the arcade columns and keystones on the west turn the corner and march off tangent to the curve. Glass replaces it along the building arc, with glass keystones.
resolve of its own, marching straight on away from the building toward the LaSalle-Randolph corner. The farther the elements from the corner, however, the more diminished; and from this comes the modulation of the plaza's openness.

Other aspects—besides the spectacular atrium—which add to the richness are the free-form plaza composition, the soaring elevator cores, and the "clip-on" office-level walkways ringing the atrium, which call for glass block floors. If this design survives to completion, it may well accomplish what Jahn wants for it. Writing in the *Inland Architect*, Jahn states, "The State Center represents a new typology for an urban office building, synthesizing Modern, Late Modern, and Post-Modern concepts. In a time when architecture is the subject of a great theoretical debate, State Center takes a polemic position for appropriate and innovative recomposition of Classic and Modern principles of the building arts." If the facility reaches the goals set for it, and that is to be hoped for, it may embody an extremely interesting polemic. [Jim Murphy]

**Credits**
Architects: C.F. Murphy Associates/Lester B. Knight & Associates in joint venture. Helmut Jahn, principal in charge; James Goettsch, project architect.
Photography: Keith H. Palmer and James Steincamp.
Energy analysis

This analysis was prepared in the Center for Planning and Development Research, College of Environmental Design, University of California, Berkeley; Vladimir Bazjanac, Ph.D., Project Director. The work is funded by the U.S. Department of Energy.

The Illinois Center in Chicago is a compact building whose loads in the interior dominate the demand for energy. Significant energy conservation in this building can best be achieved through careful design of the mechanical system. Modifications in the design of the skin or the glazing system and changes in the operation of the large atrium have a relatively small effect on the building's energy performance.

Electrical usage from artificial lights and user-operated equipment comprises one-half of the demand for energy in the building and contributes to the large cooling load. The cold climate in Chicago actually helps reduce the cooling load, and increasing the insulating value of the skin beyond double glazing is counterproductive. Design decisions that increase solar gain have a net negative effect on the overall performance. The building appears adequately shaded from the western sun by the surrounding buildings, and the use of interior blinds will further reduce the cooling load.

The atrium has a very low thermal mass. Its storage capacity is only 6.7 Btu per sq ft of glass. Therefore, if left unconditioned, the atrium would be subject to extensive overheating and undercooling. The unconditioned atrium, properly shaded and vented, however, could function as a cool heat sink: the offices dominated by internal loads could reject much of their heat into the atrium.

The glazing system is designed to change with orientation. It offers a satisfactory balance between the thermal loss and the use of natural light. Additional reflective glazing would increase the heating load more than it would reduce the cooling load; additional clear glass would substantially increase the cooling load.

The sloped façade and the stepping back of floors present an intriguing opportunity for a "double skin" (see Hooker Office Building, P/A, April 1980, p. 102). It could be achieved by glazing the openings at the perimeter of all office spaces behind the sloped façade. The minor role of the skin in the energy performance of this building, however, limits the effectiveness of the "double skin" to a less than two percent reduction in total load.

The greatest reduction of thermal loads by architectural modifications (7.7 percent in comparison to the building as designed) can result from the use of the "double-skin" reflective instead of clear glass in the atrium, and adequate ventilation of an unconditioned atrium. The annual temperature plot shows the range of temperature fluctuation in the atrium under these conditions. The probability for the temperature in the atrium to be between 68 and 78 F during any workhour of the year is 26 percent. This probability increases to 56 percent if the comfort range is extended to 60 to 85 F.

The analysis of the energy performance of this building does not include the performance of the mechanical systems in the building. It is based on annual simulations with DOE-2.1, using custom weighting factors. Its accuracy is limited to the accuracy of DOE-2.1 in representing the building's thermal behavior and does not necessarily conform to all of the details of the actual performance of the existing building (P/A, April 1980, p. 100). A detailed report is available upon request.
Carpeting of Antron® III resists dirt better, stays new-looking longer.

The secret: Unique hollow-filament fibers.

Antron® III nylon is the only carpet fiber with a rounded hollow-filament structure. So it resists dirt better than other nylon fibers. The smooth exterior shape of Antron® III minimizes dirt entrapment, and the hollow-filament structure scatters light to make dirt less apparent. So the carpet stays new-looking longer than ordinary nylon carpeting.

Antron® III is durable. Pile of Antron® III resists crushing and abrasion even in heavy-traffic areas. Keeps its fresh, new look.

Antron® III controls static shock. Gives you protection that won’t wear out or shampoo out—because it’s built right into the fiber.

That's why Fluor E&C used carpeting of Antron® III nylon to cover over 1,100,000 square feet in its Southern California Division in Irvine, California. And why your next contract carpet should be Antron® III nylon.

Write for Specifiers' Information Kit:
Du Pont Company
Room 37229
Wilmington, Delaware 19898

Installation: Fluor Corporation Engineers and Constructors, Inc., Irvine, Calif.
*Du Pont registered trademark for nylon fiber. Du Pont makes fibers, not carpets.
"I swear by MASTERSPEC 2" says Harry Schmautz, AIA, Architect & Engineer.

The other day Harry Schmautz, AIA, Partner in the 8 person general practice firm of Brinkman & Lenon, Architects & Engineers, Kalispell, Montana was talking about MASTERSPEC 2. His firm subscribes to both the BASIC and SHORT LANGUAGE VERSIONS. Here are some of the things he said that might be of interest to you.

"In a small firm like ours, people have to do many things. I do most of the spec writing, and using MASTERSPEC 2 saves 50% of my time. This gives more time for other things I have to do—like business development, design and administrative work. One of the main reasons we use MASTERSPEC 2 is that we can proceed with specs early in the project. Often-used MASTERSPEC 2 sections can be pulled and edited early in the design and development stages. We then backtrack and edit those remaining sections. So, spec-writing is not a last minute rush affair."

"MASTERSPEC 2 solves the small firm's biggest problem—updating," Mr. Schmautz added. "A small firm just cannot keep up with new products and technology. So, we keep up by using MASTERSPEC 2's quarterly updating. I also like the fact that MASTERSPEC 2 names names of products and manufacturers. This allows us to evaluate products from one manufacturer to another. Then, we can review each one and make our decision, saving us raw research time."

"Another thing I appreciate about MASTERSPEC 2," Mr. Schmautz said, "is that its complete text makes it a good checklist. Otherwise, you're apt to forget things. And, as every spec writer knows, that can cause problems. MASTERSPEC 2 is also a tremendous reference source. I particularly appreciate the cross-referencing and the continuity of the text."

In Mr. Schmautz's opinion, "Architects and contractors look to MASTERSPEC 2 as the standard of the profession. MASTERSPEC 2 is becoming the standard of the building construction industry and, as more and more architects use MASTERSPEC 2, it becomes a stronger standard."

WE COULDN'T HAVE SAID IT BETTER OURSELVES. BASIC VERSION, $395. SHORT LANGUAGE VERSION, $95.

For more information on AFFORDABLE, MASTERSPEC 2 CALL 800/424-5080 TOLL FREE. Ask for Leonard Bain, AIA. You will receive an information package.

MASTERSPEC 2 is a service of

A wholly owned corporation of AIA
1735 New York Avenue, N.W.
Washington, D.C. 20006
Circle No. 355
Organizing your information resources

William T. Lohmann

A new incentive for organizing reference literature has emerged. It seems that professional liability problems thrive in the chaos found in most offices.

The Specifications Clinic column in the July 1976 issue of P/A spoke of "drowning in the rising tide of information." It is hoped that no one has actually succumbed in the intervening years, but the tide is still swelling and practitioners must learn to cope with it.

The situation is the basis of a recent book commissioned by the AIA Research Corporation and the National Bureau of Standards. Titled The Architect's Access to Information, it was reviewed in the AIA Journal in July 1979. In its pages, Charles Hamilton Burdette analyzes the need for organization and forecasts changes in attitudes and work patterns. Asserting that a single practitioner can no longer possess all required knowledge, the author states that "professional judgment is therefore increasingly dependent on direct access to information and to the appropriate techniques for applying it."

Burdette suggests that such access "is increasingly recognized as an important way to reduce exposure to liability claims." In today's practice, claims are often based on improper use of products and materials and on ignorance of pertinent legislation, such as occupational safety and barrier-free design regulations. Both reflect reliance on inadequate or outdated information, which is naive if not negligent.

In its February 1980 "Communique," the Design Professionals Insurance Company also finds acquisition and control of information increasingly important to professional practice (and increasingly difficult to achieve). It identifies three vital resources: people, capital, and information. Referring to an "era of information overload," it points out that industry standards and product catalogs are rapidly outdated, easy access to past records has become essential, and search time for reliable information is mounting. DPIC suggests obtaining specialized expertise in grappling with the problem.

The 1976 P/A article is a beginning. Product literature, codes, reference documents, periodicals, and project archives are still the basis for most office information systems. Facilities still vary from a simple drawer file to comprehensive libraries with full-time personnel. The "Uniform Construction Index" (and CSI's new "Masterformat") have been affirmed during the last four years as industry-wide standards for filing product data.

A 1979 report by Kathleen L. Kalt on a survey of 45 established professional libraries is also useful. "Organizing and Managing Information in Architectural, Engineering and Consulting Firms" was sponsored by the Professional Services Management Journal. In the process of documenting office routines, priorities, and sample forms, the report highlights the tremendous variety of workable information systems. All libraries in the survey controlled books and magazines, half of them maintained current manufacturers' literature, and half kept job-related data. Many libraries also included slides, drawings, specifications, photographs, audiovisual aids, and product samples.

Obviously, no single system is necessarily "right" for all applications. Kalt concludes that a professional library should be unique, tailored to meet the firm's individual needs. She also makes it clear that "money is better spent on a librarian than on a library." The real need is for someone who can organize information within the office and know where to look for outside resources. Through careful nurturing, the library will build itself. She recommends a professional librarian with a degree in library science.

The PSMJ findings on the diversity of information systems, incidentally, are echoed by James M. Anderegg, library consultant to many major American architectural and engineering firms. He approaches entrenched work patterns as "given." Subtly superimposing a degree of control and coordination over them, he sometimes finds it sufficient to place responsibility for existing systems in a single person. Instead of a professional librarian, Anderegg prefers a person without preconceived ideas on what a library should be but with a demonstrable ability to organize details, a degree of patience and diplomacy, and sufficient common sense to make value judgments when necessary.

Most firms struggle with a haphazard approach to information management. They are unwilling to devote budgeted time and money to it. Burdette suggests, however, that in the future practitioners will recognize the costs of maintaining information, hiring more specialized personnel, and using more complex equipment as directly related job costs. And maybe even be reimbursed for them by the client.
A dry building is a major goal of human habitation. A leaking one is a nuisance, an embarrassment, and a costly ill to cure. Water is the foe, and a carefully designed and executed seal is one good friend.

At a distance, a building gives the impression of being a rigid, fixed-in-place, constant element of the environment. At close range, however, it interacts with its environment and adjusts itself into balance with its external conditions. The building deforms and oscillates in the wind, expands and contracts thermally, and wages a constant physical and chemical war with moisture and sunlight. Its surface is dynamic. The never-ending periodic onslaught by the elements can patiently erode the skin of any building and eventually defeat it. The construction and maintenance of the building determine how long the process will take. The architect, in his decision-making process, is unconsciously selecting the weapons nature will use to cause the deterioration.

Weakness or flaws in the surface of a building may present themselves as discoloration, stains, bulges, or cracks. A leak demands the most immediate attention. If the owner is fortunate, the leak will reveal itself. If not, an internal leak could lead to oxidation, freeze-thaw problems, shifting surfaces, or eventually even structural failure.

The increasing number of such problems in recent years has fostered a segment of the building community that specializes in "sick" buildings. These "building doctors" learn their trade primarily from practical experience, but may emerge from any facet of the building community.

New York building failure consultant Peter Corsell began with a chemical background in the manufacturing of waterproof sealants and membranes. His consulting practice started with the Sears Tower in Chicago. One of his current projects is keeping the Chrysler Building in New York from shedding its brick façade. Says Corsell, "All I have been doing for 30 years is looking at sick buildings." Corsell also practices preventive medicine. He will design, detail, and specify to prevent failures from occurring and offers an inspection service. He explains, "My eyes are looking only at the waterproofing."

Robert J. Capazzi is the president of Jobin Waterproofing. Jobin is a large sealant and waterproofing contractor based in Farmingdale, NY. One current job for Jobin is the new IBM building in New York by architect Edward Larrabee Barnes. Three years ago, however, Capazzi formed a new company, RJC Associates, Inc. After years of experience installing water protection, Capazzi now offers his services to others. In his words, "You have to combine analysis and practicality on the spot." Capazzi's services can be obtained to ensure that the waterproofing design and the waterproofing reality are one and the same.

The giant in the field is Wiss, Janney, Elstner & Associates of Northbrook, IL. The company investigated over 850 buildings last year, has three offices, and

The sonoscope is a device that can be used to locate internal cracking, a possible path for water migration (above). An oscilloscope is used to monitor the device. A tilt meter (right) is a device used to monitor building sway. Output from a rooftop reading of a tilt meter is shown below. Photos: Wiss, Janney, Elstner & Associates.

TILT METER READING: HIGH RISE BUILDING IN CHICAGO
emploNs 105 people. Over half of the employees are construction professionals, 8 of whom are architects. The firm emerged 20 years ago when the three founders, Jack F. Wiss, Jack R. Janney, and Richard C. Elstner, merged for their first job of quality control of concrete. The research background of the men soon led to the construction of an extensive laboratory solely for the purpose of analyzing construction technology. The firm has the capability to investigate, field test, and document failures as well as make recommendations for repair and furnish the design and inspection of that repair. Jerry Stockbridge is vice president of the company and an architect. He expresses the company attitude: "We bend over backwards not to make any superficial decisions; we test extensively."

The "doctor's bag" encompasses a broad range of instrument sizes and accuracy. A good building failure specialist can tell how effectively a stone facing is attached by simply tapping its exterior with a sounding hammer. More precise instruments can be attached to the building at various points to monitor its movement over time. Highly sophisticated metal detectors and sonic devices provide information about the hidden condition of stone, concrete, and steel. Occasionally the inspection even requires the specialist to cause artificial "rain" on a wall or to test an existing portion of curtain wall for performance in wind. What cannot be learned from on-site inspection or field testing is then brought back to a laboratory where mockups can be constructed and chemical analysis performed.

Whether a building needs a bandage or major surgery depends to some degree on the care or negligence that is applied during its use. The ingenuity of the building design and the skill with which it is built have a major foe in the genius of water.

How does a leak behave?
Moisture within the building can take a number of different forms. A thin film of water can condense on a cold surface and grow into droplets. Droplets become trickles, sheets, and puddles. If not actively or passively removed, the water can stain, cause mildew, rust, and rot to name just a few ill effects. How the water travels into the building depends to some degree on the construction materials involved. A porous material, for example, initially may absorb the water. Continued wetting will eventually cause saturation and "wicking" from one side of a wall or slab to another. Gravity takes over after saturation, and causes the water to follow the path of least resistance, vertically down. Wind can drive rain through an opening horizontally or create pressure that will cause the water to be sucked into a

1 Bar spray is used for evaluating the water tightness of large areas of wall surface. 2 Water test frame used on masonry for simulating a rainstorm with high winds. 3 A simple sounding hammer can be used to locate internal cracking or adhesion problems. 4 A Whittemore gauge is used to measure joint movement as the change in distance between two points. 5 Vacuum frames can be built to induce lateral loadings. 6 The scratch gauge can monitor joint movements unattended. 7 A calibrated solid cone hand-held spray can be used at specific locations of suspected leaks.

building. The low-pressure side attracts water from the high-pressure side. A mixture of wind and air can act like a percolator and push water up and over a barrier.

The apparent attraction of water to itself allows it to defy gravity and actually move upward. Capillary action occurs between close-fitting, smooth sheet materials, such as glass.

A temperature differential tends to concentrate water on the cold side of a material, but usually won’t have sufficient strength to pull water through a crack. Of course, a high temperature will cause the water to evaporate and may transport moisture from place to place. The expanding force of freezing water is one of nature’s strongest weapons.

In addition to its own means of transportation through a building, water can be very effective for transporting other materials, either in solution or suspension. Efflorescence in brick masonry is an example, where salts are transported by water. A leak in today’s buildings is not just letting water into the building; it is quite likely passing on acid rain. Road salts transported in wet snow tires similarly cause deterioration of parking decks.

Where does the water go? With a demonic regularity, moisture finds its way to the insulation under a built-up roof or within the faces of an exterior wall. Some insulation is well suited for the task and soaks up all of the water it can, ruining its insulating properties.

High performance seals and sealants

Given the degree of difficulty an owner has in finding the exact cause of his building problems, the devious character of water and its ability to find a way into the building, and the scale of a headache that a leak can be, one would think that the procedure to avoid this situation in the design and construction stages of a building would be clearly delineated and rigidly upheld. In the case of high-performance building seals and sealants, this is not yet true.

Architect Charles Parise of Detroit’s Smith, Hinchman & Grylls has been chairman of ASTM Committee C-24 on Building Seals and Sealants for eight years. For the last five, the committee has been laboring over its Recommended Practice for the Use of Elastomeric Sealants. The document is expected to be in print by November 1981.

Parise explains: “We are just starting to reach the point where the procedure is available.” Committee C-24 consists of 170 people and 28 subcommittees whose members include designers, manufacturers, and contractors. Parise continues: “It takes a long time to get the whole industry to agree.”

The Sealant & Waterproofers Institute (SWI) will hold its fifth annual meeting next month in Boca Raton, Fl.

Poor joint design or sealant application can cause the sealant to fail. At right, 1 Sealant adhesion failure due to inadequate joint size. 2 Sealant completely squeezed out of sill joint too narrow to accommodate the expansion of adjacent masonry. 3 Cohesion failure of sealant due to vertical movement of adjacent panels. 4 Adhesion failure due to improper installation of hacker rod. 5 Popular but ineffective remedy for leaking joints. 6 Adhesion failure to window frame caused by unclean surface at time of installation.

Membership in this organization is restricted to manufacturers and installers of sealant or waterproofing materials. There is an SWI committee currently in session writing a manuscript in joint design for use by the industry.

The manufacturing community takes its lead from national specifications. For elastomeric sealants, Federal Specification TTS-227E applies to two-part sealants and TTS-230C is used for one-part sealants. TTS-1543A is also applicable to one-part silicone sealants. ASTM C 920 applies to both single- and multi-component elastomeric sealants and is expected to supersede the previous Federal Specifications. It encompasses all chemically curing sealant compounds. Manufacturers are permitted to test their own products to meet these specifications.

Why joints fail

Assuming the sealants actually applied to building joints comply with the national standards and that these standards and test procedures coincide with the actual building conditions, there are only two generic places where mistakes can be made: the design stage and the application stage of construction.

Peter Corsell attributes design flaws to “a glaring cavity in architectural education.” Many manufacturers agree. The architect must be ignorant of good joint design. Why else would he make the joints so thin? As Parise puts it: “The smaller the joint, the larger the problem.”

Says Robert Capazzi, “Most architects do not have practical field experience.” Wiss, Janney, Elstner’s Jerry Stockbridge points the finger at what he calls “interface breakdowns” between the architect and his engineers and consultants. Ignorance, inexperience, lack of communication, and noncoherence seem to be at work, Charles Parise is quick to add: “Architects don’t have a monopoly on causing sealant failures. The whole industry is to blame. The architect relies on the manufacturers to supply him with the proper information and the applicators to install materials correctly.”
What about the application? Robert Capazzi attempts an explanation. "Most applicator firms have no theoretical technical capability. An applicator with no theoretical technical knowledge applies the material regardless of tolerance discrepancies." Knowing how to use a sealant correctly is not a prerequisite to buying sealant materials. There is no industry-wide training program for applicators. Coring or slump testing, so common in the concrete industry, is unheard of in the sealant field. There is no such standard site-testing procedure for sealants.

There are very few architects and applicators who would be willing to be characterized as above. Each person operates within a framework of safety in which he feels comfortable. The design and construction of a building is a constant vigil. What is more likely the case is that people have the total responsibility of the joints without having total control. There are several dilemmas involved with joints:

Dilemma 1: Sheer numbers. There are hundreds of joints in even a small building. All of them change dimension during the course of time. The more different materials used on the façade, the more complex is the movement and the more demanding are the requirements on the sealants.

Dilemma 2: The joints are small. In spite of their number, the joints are a very small part of the building in dimension, time, and cost to construct. On drawings they are idealized as single lines until they reach the detail stage. Their design comes at the end of a long chain of decisions, all of which usually are conceived of as being more important than the joint and sealant decisions.

Dilemma 3: How many. One could make the decision that by reducing the number of joints, one reduces the possibility of human error in placement. By reducing the number of joints, however, the units that are being sealed get larger. The larger the unit, the more it expands and contracts, thermally, structurally, and from moisture; thus more stress is put on the sealant, and the joints must increase in size. If we increase the number of joints, reducing the movement and the joint size, we increase their total number and the possibility of human error.

Dilemma 4: Building size. The taller the building, the more general the joint is asked to be. On a 40-story curtain wall, for example, the same joint is detailed for the second floor as for the fortieth. This joint is the same on all sides of the building and is maintained towards the corners or the center of the faces. We know that the wind pressures are varied on the façade. We realize that the surrounding buildings or climatic factors may cause a dominant rain direction, and surely the sun will warm only certain portions of the façade at one time. We also are aware that taller buildings today are lighter and more flexible than ever. The accuracy of predicting the precise deflection or oscillation is great when compared to the height of the building, but it is considerably less when compared to dimensions as small as the joints.

A large building also presents the possibility of installing the sealant on various sides in different weather conditions; this means that the actual application might be accomplished in a precarious location, increasing the incentive to place the sealant hurriedly and reducing the probability of inspection.

Dilemma 5: People. Decisions that affect the joints are made constantly in the design and construction process. The designer who first draws the joints affects their design through their spacing and location. The precaster or stone cutter affects the joint with his accuracy of sizing. The steel erecter controls building tolerances on a large scale. In the whole string of people who have an effect on the final joint placed in the building, there are usually only one or two who completely understand the interrelation between the theoretical design and the actual on-site application of the sealant.

Dilemma 6: The real design. Under optimal conditions, the person who designs the joint and recommends tolerances initially has no knowledge at all of the precise tolerance that will actually
exist at the site the day it is installed. Nor is he aware of the exact temperature, condition of the joint, or skill of the applicator. By contrast, the applicator, who may meticulously clean the joint surfaces and apply the sealant, has no idea what precise factor of safety has been incorporated into the joint nor has he the technical theory for double checking the reality with what is designed.

Dilemma 7: Office size. In a large office, the job captain, draftsman, and specifications writer are all different people and most likely in different locations in the building. For a large construction, the architect's representative is engaged full time at the building site. The common thread in the decision is the job captain. The person with the most detailed sealant knowledge is probably the specification writer. The specification writer is not often informed when a change of dimension is reported and rarely visits the site. When a redesign is called for, he is rarely consulted. Large offices and buildings do, however, frequently have the budget to hire consultants to check their plans and specifications and inspect the application of the sealant.

In a small office, it is conceivable that a single individual does all of the designing and inspection, eliminating communication problems. This may mean that a specialized and intricate knowledge of sealants is unlikely. The time to delve into the subject is limited. The budget will not permit a joint consultant or inspector, and site inspection has to be worked into the rest of the designer's working day. The best answer for these situations is simplicity, no tricks, no fancy materials or joint design.

Let the experts do it
Given these seemingly irreconcilable dilemmas, anyone who decides to play the joint game had better expect a stacked deck. Two excellent tools to combat such odds are either an extraordinary amount of luck or a large body of experience coupled with eternal vigilance. More and more architects are turning to the latter in the form of a consultant. On occasion, the owner might also make the decision to seek help. Others are employing the performance specification and letting the manufacturer contribute his expertise.

If a consultant is used, there is always a question of how much he should do. He may be called in to review the details and specifications created by the architect, or he may be asked to check the manufacturer's suggestions. More and more frequently, the consultant is given the entire task of creating the joint design and the specifications.

When a consultant is used, the result is a specific design that, it is hoped, optimizes the joint performance. A performance specification is different. For a curtain wall, for example, only broad guidelines are given by the architect about the exterior and interior profiles and surface conditions. A feasibility study is done by the designer to guarantee that the dimensions are within reason. The competing curtain-wall manufacturers then design the exact configuration of the mullion and joints based upon what is convenient and available to them. The manufacturer will most likely increase his bid somewhat for this service.

The two methods stress different advantages. With the consultant, the joint design is optimized, but the manufacturer may have difficulty meeting the specifications. If the performance method is used, the architect is assured that he is getting optimal manufacturing and erecting conditions, but may not get the optimal joint.

Why is it so hard?
The joint design may look easy at first glance. All of the materials are predetermined except the sealant, and the only difficult number involved is the width of the joint. Let's look at the kind of considerations which can affect the joint design.
At left, the two details represent the difference between a curtain wall designed over a decade ago by the office of C.F. Murphy with prescriptive specifications (below), and a detail that accompanies performance specifications for a more recent building (above). The performance specification includes primarily joint profile and appearance. At right, Peter Corsell illustrates the interrelationship between various aspects of cavity wall design. The movement in an active building joint is affected by a wide variety of seemingly unrelated decisions.

One would expect the joint designer to consider the normal deflection characteristics of the building under load. The larger the elements to be sealed, the more influence these normal building deformations have on the joint design. What is more difficult to determine is the shrinkage that may take place in a structure when it eventually dries, the creep that occurs over time, or the settling of foundations. Certain materials are more prone to these problems than others.

The elements that compose the joint may be dependent upon structural movement or independent of it. Most of the time, the panels or elements are free of the structure and are themselves unrestrained. They support only their own load.

Once the support framework is understood and the support system of the elements has been chosen, the joint must be examined. If stone cladding is used, the fabrication technique employed must be investigated and the surface condition noted. A large job may use several different stones having slightly different properties to present to the sealant. Fabrication methods may also cause potential tolerance problems.

With the precast concrete cladding, two difficulties are frequently mentioned. The most serious is the failure of contractors to remove the form release agent from the surfaces to be sealed. Corner joints can also mean trouble where mitering or lapping is sometimes attempted. A separate solid precast corner unit is recommended, allowing joints to occur some distance from the corner.

Masonry cladding involves a clear understanding of masonry construction procedures. Some of these issues are illustrated above. Also of great importance is the swelling and shrinking which take place from exposed walls constructed of highly absorptive brick.

In contrast to brick, stone, and concrete, metals do not absorb water, and they involve a wide variety of surface treatments. Some of the surfaces might require sealant primers and others not.

The seal that involves metal generally involves another type of material as well, whether it is glass or some sort of cladding. All must work together. Occasionally, for example, a protective coating is used over glass during construction to avoid contact with concrete or mortar.

When the time comes to seal the glass and its metal frame, the coating is still on the glass and ruins the seal.

The tolerances inherent in each kind of construction are a very important consideration. What is the normal tolerance expected? How is alignment achieved? How much room is there for correction? Ironically, preconsideration of such issues can work against the solution. If, for example, a window frame incorporates a built-in stub to catch the sealant back-up rod, the joint around the window must fall within the required widths. If the joint is larger, the sealant may need to extend farther into the joint, and the stop for the back-up rod will actually be in the way.

How will the sealant be applied? If there is a double-seal "rain-shield" solution, it is particularly important to consider how the interior seal is applied. If the sealant is applied from the inside, continuity is very difficult to achieve around columns and floor slabs which block access. The cost of the installation will reflect the experience and amount
Technics: Moisture protection

of labor needed to install the joint. What will be the cost of replacement in areas of high probability of leaks? What is the building type, and how much risk to the contents does a leak represent?

The last but most critical external factor for joint design is the thermal movement. The actual temperature of the substrate will determine the extent to which it expands and contracts. The interior building temperature usually will serve to moderate the surface temperature. Surfaces in the direct sun will heat up, especially dark-colored ones. Materials with a high thermal mass will take longer to heat up and longer to cool down. It is the external ambient air temperature gradient, however, that is commonly used in design. It is simpler to obtain, and most industry experts are comfortable that any error is on the safe side.

The design

The equation normally used to determine the change in length of a substrate multiplies the length of the material by its coefficient of thermal expansion and then multiplies this product by the outside temperature gradient. If the exact temperature of installation were halfway between the highest and the lowest temperatures, the temperature gradient would be half the difference between the expected extremes. If this gradient were used for the design, failure of the joint is almost certain. If the installation takes place at a temperature above or below the middle temperature, the joint would fail in either compression or tension. If, however, the exterior temperature gradient is taken to be the entire range from the expected lowest to the highest, all of the possible temperatures of installation, from cold to hot, are protected.

The most common type of joint used today is the butt joint. Sealants are available today that have the capability to expand and contract as much as 50 percent. Class A high-performance elastomeric sealants have the capability of expanding plus or minus 25 percent of their joint width. That is, a nominal 1-in. joint can expand to 1 1/4 in. or contract to 3/8 in. Standard recommended procedure would then equate 25 percent of the joint width needed and the total change in length of the substrate. Solving this equation for joint width effectively multiplies the change in length of the substrate by four.

This equation assumes that the materials on either side of the joint are the same and that the length used in the equation is the sum of half the length of the building elements on either side of the joint. It also assumes that the elements are unrestrained.

The resulting joint width is a minimum dimension. All of the other deformations or deflections from the other considerations discussed would cause the width of the joint to be increased. The only way that the same sealant can absorb more expansion or contraction is by increasing the number to which it can add or subtract 25 percent. Simply put, 25 percent of 1 in. is 1/4 in.; 25 percent of 2 in. is 1/2 in. Charles Parise is even more conservative in his design. Says Parise, "I call for 25 percent sealants and use only three-quarters of the capability. I prefer a greater safety factor."

If the joint is constructed imprecisely and is actually smaller than the minimum design width, the joint can fail in either compression or tension because the movement will exceed the designed capability of the sealant. If this occurs, the only recourse is either to correct the joint width or to use a sealant with a larger movement capability.

The depth of the joint is determined by the depth at which the backer rod is placed. The backer rod also performs the very valuable functions of shaping the sealant and keeping it from adhering on three sides. In order for the sealant to function, it must be permitted to act like a rubber band. It must be stuck at the two edges and free to expand and contract at the center.

The depth of sealant used depends upon the actual sealant chosen. There are three basic types of high-performance sealants that meet the Federal Specifications: polysulfides (the oldest), silicones, and urethanes (the newest). Each has its advantages and disadvantages.

Two-part polysulfides and two-part urethanes offer complete color range capability while the silicones are restricted to a preset range of a dozen or so colors. Silicones, however, show excellent resistance to ultraviolet light and cure very fast. Some sealants cannot be used on concrete, marble, and certain metals. Others are more generally compatible with all substrates. Urethanes are very strong in areas of high abrasion. And so on. Most specifiers can relate the difference between silicone, urethane, and polysulfide, but are not able, for example, to recall at will the differences between the various types of silicone sealant.

This kind of information is found in the manufacturer's published literature. It is also available in ASTM publications.

Example: A 30 ft. concrete precast panel in Toronto. Concrete has a thermal coefficient of 6.5 x 10^-6 in/in/°F and Toronto will go from -30° F to 130° F on a south wall.

Total movement = Thermal coefficient x length in inches x temperature gradient = 6.5 in/in/°F x 30 ft x 12 in/ft x 160° F = .374 in. 106

Percent movement = Total movement divided by joint size x 100

If a 1/2 inch joint was planned the TOTAL percent movement (expansion + contraction) = .374 in x 100 = 74.8%. .5 in.

If a joint is sealed on the hottest day of the year (it's possible) then the joint will only see expansion and very few sealants can tolerate 75% expansion as a cyclic occurrence. If one looks at the 75% total movement and thinks ±37.5% and that a ±50% sealant will work easily in that joint, he has to insure the sealant is installed in exactly a 1/2" joint and at 30°F and then there is very little room for the human factor that occurs. The rule of thumb is that a sealant rated to move ±50% (Class A Canadian Spec 19—GP-9M) should be used in a joint whose total movement is calculated at 50%. This gives the insurance factor if the joint isn't installed perfectly. Similarly, a sealant rated at ±25% movement (Class A U.S. Spec TTS-002300 or TTS-001543A) should be used in a joint where the total movement is rated at 25%.

The U.S. Army has a very helpful rule of thumb in their Manual on Sealing and Caulking. It gives this formula:

Minimum Joint Width = \( \frac{1}{10} \) x Maximum Joint Movement Capability x Movement Expected of the Sealant

Using the above mentioned building in Toronto as an example and ±25% (Class A) sealant:

Total expected movement of panel (from calculation) = .374 in.

Movement capability of sealant in a single direction = 25% = .25

1 x .374 in. = 1.5 inch joint.

Thus a 1.5 inch joint is desired. If a ±50% low modulus silicone is used:

Total expected movement of wall panel = .374 in. Movement capability of sealant = 50% or .50

1 x .374 in. = .75 inch joint.

Thus a 3/4" wide joint is desired.
The key to the effectiveness of a joint is the understanding that the sealant must be free to flex. It must not be adhered at three sides. The joint width must be accompanied by a thorough understanding of the expected movement so that the sealant will not be over-extended or excessively compressed. How much the joint will thermally expand and contract is dependent upon the material chosen, its color, and its coefficient of thermal expansion. At right, industry experts have formulated a table for determining approximate joint widths. These widths, of course, do not take all types of possible budding movement into consideration.

Once the selection is made of the sealant that gives the most desirable properties for the situation, the depth of the joint can be considered, and the first design is complete. It is called the first design because the final design will most likely occur on the site of the building just before the sealant is applied.

**The real design**

On-site control is usually limited. The seal may fail because an installer had grease on his hands when he placed the architectural element. Perhaps the worker accidentally spilled a soft drink on the area to receive the sealant, and the sugar remained to spoil the adhesion to the joint. Maybe the surface was simply wet from rain the night before. One consultant recalls a building containing 400 apartments where 250 of them leaked. It is possible that the sealants were installed below the recommended temperature and they did not cure properly. Perhaps the sealant in the caulking gun was too stiff and actually pushed the backing rod deeper into the joint, causing a thicker seal.

One of the biggest problems in joint design is that the joints are not clearly defined. "All joints should be drawn full size," says Charles Parise. "The width, depth, and tolerances should be included." He continues, "Then there is no question what is expected of the contractor."

The most common problem is tolerances. Robert Capazzi explains: "What generally happens is the construction tolerances result in changes in designed conditions. If the joint is not built to the drawings, we will attempt to change the joint design. The joint redesigns itself in the field." Capazzi continues: "Anticipating what could happen is a key factor."

If anticipation fails, there is always field testing. "Because there are so many things that can go wrong," Parise reasons, "a field test ought to be made prior to installation. Five feet of sealant should be installed for all concerned parties to inspect." Proper inspection of joint conditions by a qualified person prior to sealant application is also critical to any successful joint. The other equally important step is to have the expertise available to redesign the joint. When the joint is completed, it's your solution or it's your leak. [Richard Rush]

**Acknowledgments**

We wish to thank the following architects, waterproofing and sealant professionals, organizations, and manufacturers for sharing their opinions and knowledge with us: ASTM; Kallmann, McKinnell & Wood; John Coburn; Peter Corsell Associates, Inc.; Dow Corning Corp.; General Electric Co.; Jobin Waterproofing; Robert J. Capazzi; C.F. Murphy Associates; William T. Lohmann; National Research Council Canada; Klara Karpati; Sealant & Waterproofers Institute; Smith, Hinchman & Grylls Associates, Inc.; Charles Parise; Sonneborn; Thiokol; 3M; Tremco; V.I.P. Enterprises, Inc.; Wiss, Janney, Elstner & Associates, Inc.; Eugene L. Perrine; Jerry Stockbridge. For moisture protection product and literature information see p. 138.
INTERIOR DESIGN Magazine gives you more interior design information than INTERIORS and CONTRACT combined.

Every month in INTERIOR DESIGN, you'll see the field's largest, most spectacular selection of contract and residential installations by leading designers. You'll see them in full color, and exclusively in INTERIOR DESIGN. You'll even find more contract projects in INTERIOR DESIGN than in the combined pages of Interiors and Contract.

And that's not all. We publish more in-depth reports (such as January's "Interior Design Giants" ranking of 100 top-dollar-volume design professionals). We publish more "inside" articles and interviews (recent examples: "Business Aspects of Hospital Design" by Emily Malino of Perkins & Will, and corporate profiles of Skidmore, Owings & Merrill and Arthur Gensler & Associates)... more market and new-product news, more sources, and more advanced products than any other magazine serving the interior design profession... a total of 4,104 pages in 1980!

You may start your subscription with our January issue, pictured above.

INTERIOR DESIGN
850 Third Avenue, New York, NY 10022

Please start my subscription to INTERIOR DESIGN. [ ] (Check box to begin with January issue.)

[ ] I'm enclosing $29.50 for 1 year (12 issues and your annual Buyers Guide). [ ] Bill me later. Charge my:

[ ] VISA [ ] MASTERCHARGE [ ] AMEX Exp. Date

Card No.

Signature

Name & Title

Firm Name

Mailing Address

City, State, Zip

Type of Business

U.S. Possessions and Canada $32.50 for 1 year. All other $42.50 for 3 years.

INTERIOR DESIGN
850 3rd Ave., NYC, NY 10022

January cover photograph by Ezra Stoller.

Why settle for less? Just use the coupon. You'll soon see why the nation's foremost interior designers and interior architects are delighted to lose themselves... and find themselves... in the pages of INTERIOR DESIGN.
GO WITH McGRAW-HILL’S EXPERIENCE!

Join the ARCHITECTS’ BOOK CLUB
McGraw-Hill’s long-established club for architects that saves you BIG money on the important new books of all publishers!

Take any one of these great professional books for only $1.89

Values up to $49.50

Special $1.89 book comes to you with your first club selection

Why YOU should join now!

• BEST BOOKS IN YOUR FIELD—Books are selected from a wide range of publishers by expert editors and consultants to give you continuing access to the latest books in your field.

• BIG SAVINGS—Build your library and save money too! We guarantee savings of at least 15% off publishers’ list prices on every book. Usually 20%, 25%, or even higher!

BONUS BOOKS—You will immediately begin to participate in our Bonus Book Plan that allows you savings between 70-80% off the publisher’s price of many books.

• CONVENIENCE—14 times a year you receive the Club Bulletin FREE, fully describing the Main Selection and alternate selections, together with a dated reply card. If you want the Main Selection, you simply do nothing—it will be shipped automatically. If you want an alternate selection—or no book at all—you simply indicate it on the regular reply card and return it by the date specified. You will have at least 10 days to decide. If, because of late mail delivery of the Bulletin, you should receive a book you do not want, just return it at the Club’s expense.

As a Club member, you agree only to the purchase of four books (including your first selection) over a two-year period.
Save your energy!

...with Zero's new [AIR-STOP] A Door System.

In winter, cold outside air infiltrates buildings.
In summer, the reverse is true: cooled interior air leaks out, or "exfiltrates."
In both cases, there is serious energy loss.
Zero now offers a way to eliminate such problems. We do it with one of our Air-Stop Door Systems.
Each system consists of a different combination of Zero seals.
These facts prove their effectiveness:
Federal specifications call for a standard CFM (Cubic Feet per Minute) air flow factor of 0.5.
Unsealed, a typical door tested by us showed air loss due to filtration of 11 CFM—22 times worse than the Federal Standard!
We tested 10 different Zero Air-Stop Door Systems and 1 double-hung window Air-Stop System. In every case, we bettered the Federal Standard. Using our Air-Stop System A, we came up with a rating of 0.03 CFM!
The results of these tests appear in our current catalog. If you'd like one, just drop us a line.

Zero [AIR-STOP] A
Zero Weather Stripping Co., Inc.
415 Concord Ave., Bronx, NY 10455. (212) 585-3230
1924-1981...57 years of opening the door to progress

Circle No. 376 on Reader Service Card
Smooth departure.

Just as you knew Sargent would. The 60 Series Exit Device has all the features you want... every finishing touch... in true hardware finishes, too. As always, Sargent quality stands out above all others. While your Sargent Distributor delivers on time. Every time.

Sargent 60 Series Exit Devices are offered in a full line of choices... rim (main photo), vertical rod and mortise. Sargent, New Haven, Connecticut 06511 Sargent (Canada) Ltd.

SARGENT
Division of Kidde, Inc.

Circle No. 360 on Reader Service Card
Your best ideas look better with Rayflect™

A great idea begins on paper. But your best ideas really come to life when you add the beautiful finishing touch of Rayflect coated glass from Advanced Coating Technology.

ACT is known for quality. Our superior coating techniques provide excellent solar rejection ratios, in turn allowing your clients to save valuable energy dollars. For maximum energy efficiency, Rayflect coatings re-radiate infra-red and ultraviolet light. Whether you spec clear, gray, bronze or blue-green, our coatings reduce glare and provide more uniform daylighting in work areas.

Outside, the uniformity of Rayflect color assures minimal checkerboarding and distortion effects. ACT is known for service, too. We back our products with a limited 10-year warranty against peeling, cracking or deterioration. We'll work closely with you from initial specs to final delivery, making sure your order is handled efficiently and filled quickly— the way you like to do business.

Make your good ideas better than ever. With Rayflect, from Advanced Coating Technology. The more you look the better we look.

For more information, see Sweets #8.26, or write:

Advanced Coating Technology, Inc.
Rayflect Division, A subsidiary of Worthington Industries, Inc.
306 Beasley Drive, Franklin, Tennessee 37064 • 615-790-6001 • Telex 55-5145
Everything You Need for the Best Low-Cost Drainage is Here

This is Channel Slope. It's our new pre-cast polyester concrete trench drain system.

Channel Slope gives you up to thirty different channels with a built-in .6% slope. That .6% slope allows level adjoining surface areas and makes the system self-cleaning. Neutral channels with no slope are available. A half length channel is available too. Cast of polyester concrete material, our channels are 50% lighter and three times stronger than concrete. They're also saltproof and acid and alkali resistant. Their water absorption rate is less than 1%, so they are frostproof.

Next, you can choose between our cast iron and steel grates.

Just as Channel Slope eliminates on-site fabrication of concrete trench drains, it also does away with the need to purchase separate gratings. Our grates fit snug and tight to our channels. Cast iron grates stand up even to constant 60-ton truck traffic. Both types are bicycle and wheelchair proof.

Plus, you can get any of these components. There are catch basins, channel caps and vandal proof locking devices for the grates. And we provide pipe outlets and knockout panels in various positions on our channels and catch basins to give you a choice of evacuation points and directions.

Install it wherever you need perfect, low-cost drainage. Put the perfect drainage system outside along and across roads and highways, airport runways, curbs, pedestrian areas, parking lots, playgrounds, and sports fields. Or inside factories, garages, warehouses, plating shops, washdown areas, and agricultural buildings.

Channel Slope makes surface drainage easy and inexpensive.

Minimize labor, maintenance and repair costs now with Channel Slope.

Fill out and mail the coupon below for our new catalog and find out how much you can start saving. Or call 216-464-5603.

Tell me more about Channel Slope, the new pre-cast modular drain system.

Name
Company
Address
City
State
Zip
Phone

Mail today to: ACO Drain Incorporated
It's the law

Liability for alleged negligence

Norman Coplan

Determining an architect's liability for malpractice is based on standards ordinarily expected of the profession. Owner/architect agreements can increase the liability if the architect is not wary.

Although the legal parameters of potential liability for architectural malpractice continue to expand, the general standard by which the performance of an architect is measured has remained relatively constant. To avoid liability for alleged negligence, an architect must satisfy the standard that in performing his architectural function, he has employed at least that degree of skill and care ordinarily used by members of the architectural profession at such time and in the locality in which the services were rendered. Typical of the application of this standard of care in determining a claim of negligence asserted against an architect was the decision of the District of Columbia Court of Appeals in Noble v. Worthy, 378 A. 2d 674.

The Noble case resulted from the fatal fall of a 22-month-old child from the balcony of a fifth-floor apartment. The accident occurred at a time when the child's mother was visiting a friend, and the child, unnoticed, wandered out to the balcony of the apartment leased by the friend. During the period that the child was out of the view of his mother, a neighbor saw him on the exterior of the balcony, holding on to either the floor or a rail. Before the neighbor could reach the apartment to report the danger, the child fell to his death. No witness knew how the child had gotten outside of the balcony. The mother of the child sued the architect who designed the building for negligence in connection with his design of the balcony and also sued the owner of the building for negligent maintenance.

The balcony from which the child fell was a typical enclosure, consisting of two large panels, some vertical bars, and one horizontal bar each on the top and bottom. The distance between the bottom rail and the floor was 6¼ in. and the distance between the panels and the floor was 6½ in. The distance between the vertical rails ranged between 5 and 5¼ in. The rail was over 42 in. high. The child's height at the time of the fall was 28 in.

In respect to the claim against the architect, the primary issue was whether his design satisfied a standard of performance which would exonerate him from liability. In this connection, the architect testified that there were no building code provisions which contained any standards for designing balconies and that customarily, architects designed vertical balcony railings to be 6 in. apart. Another witness, Chief of the Engineering Section of the District of Columbia Department of Housing and Community Development, who had been the Chief of the Structural Section when the building's plans were submitted for a building code compliance review, testified that the code contained no provisions for balconies not projecting into public space, and that the building plans had been found acceptable by the reviewing structural engineer when submitted. He also indicated that reviewing engineers normally exercised their individual judgments on whether the distances between horizontal balcony railings were safe, because there was no set norm.

Plaintiff's only witness on architectural standards was an architect who stated that he was unable to testify as to any generally prevailing balcony safety standards. However, he gave his own opinion that the balcony, as designed, was unsafe for children.

The trial court dismissed the action as against the architect, and the Court of Appeals affirmed this dismissal, stating:

"Architects are held to a standard of performance which requires them to employ that degree of skill and care of that used by their colleagues. . . . Plaintiff's only witness on architectural matters admitted that he could not testify as to any generally prevailing standards of safety in balcony construction. In contrast, the defense evidence showed that the prevailing standards had been satisfied in the construction of (the) balcony. Without evidence indicative of a deviation from accepted safety standards, plaintiff failed to make out a prima facie case of architectural malpractice."

Although there was no evidence that the balcony's condition had deteriorated or changed in any way since the building was constructed, the jury awarded recovery to the plaintiff as against the building owner, apparently premised upon the theory of negligent maintenance of the balcony. The Court of Appeals in this instance, however, reversed the trial court and also dismissed the action as against the building owner. The Court said:

"The defendant's duty as landlord was to provide a healthy and safe dwelling. It was bound to exercise reasonable care under the circumstances. Landlord's duty of reasonable care does not require him to foresee all possible dangers. We are unable to conclude that defendant was bound to anticipate that a 22-month-old child might be allowed to play on a fifth floor apartment balcony without adult supervision, or even casual observation, for a couple of minutes. The record contains no evidence whatsoever as to how Kushan (the child) fell; illustratively, he could have climbed on the chair which had been left on the balcony and gone over the railing. Since plaintiff introduced no probative evidence suggesting negligence (relying simply on the occurrence of the accident) she failed to make out a prima facie case. The jury impermissibly was left to mere speculation as to the cause of the fall."

Since, under prevailing law, an architect does not warrant the perfection of his design, but undertakes only to exercise due care as measured by prevailing architectural standards, he should be wary about language contained in a proposed architect-owner agreement which would charge him with a higher standard.
Introducing the StarTherm Energy Efficiency Analysis!

It won't cost you a penny, and it could save your clients thousands.

StarTherm insulated roof and wall systems are so remarkably energy efficient we think they'll out-perform almost any conventional construction materials. And we're willing to prove it with a free StarTherm Energy Efficiency Analysis.

Just give us the location and specifications of your proposed building project and your Star Builder will ask our computer to determine the energy savings you could realize with a StarTherm building of the same size. The results can be dramatic.

The StarTherm system's remarkable insulating properties will significantly reduce operating and maintenance costs, which account for about 50% of the total life cycle costs of any building. (The rest is initial construction and finance costs, plus improvements or building additions.)

You'll find it pays impressive dividends to build with StarTherm insulated panels.

Remarkable but not surprising.

StarTherm insulated panels offer some of the lowest U factors money can buy: 0.043 for roofs, an even lower 0.040 for walls. They have no through fasteners or compressed insulation points. Joints form a positive energy tight seal, and, according to ASTM-E-283 testing procedures, allow no detectable air infiltration.

Tax incentives. Reduced maintenance costs. Even lower insurance premiums.

The StarTherm system's low thermal transmission properties might qualify your structure for energy-related tax incentives. Additional savings will occur through reduced maintenance costs. And our Class 1 low fire hazard rating and UL 30, 60, and 90 wind uplift ratings could lower insurance premiums. So over the life of your building StarTherm panels really pay off.

Ask for your energy efficiency analysis today.

Your Star Builder wants to help you design the building your client will thank you for—today and in the future.

So ask for your free energy efficiency analysis today.

Call toll-free 800-654-3921. In Oklahoma call collect 405-636-2548. Or write Star Manufacturing Company, Box 94910, Oklahoma City, OK 73143.

Circle No. 363
Instant walls with the master's touch.

Like the celebrated Craft Guilds of yesteryear, today's league of Gold Bond Master Partition Specialists are skilled creators of inner space. They are craftsmen in the art of erecting the new, fully-accessible, demountable partition system from Gold Bond — GB-350. This revolutionary gravity lock wall system, using a patented clip, unique horizontal steel rail and stud system, is unmatched for speed of erection...

and fast, easy demounting and rearrangement. The result is a high-performance wall at a highly competitive price.

To assure the highest standards of workmanship and quality, GB-350 is available through a limited number of select Master Partition Specialists around the country. More and more architects, building owners and managers have discovered the many unique advantages of Gold Bond GB-350, and its companion, Durasan pre-decorated gypsum wallboard.

For complete information on GB-350, contact the Authorized GB-350 Master Partition Specialist in your area by calling 1-800-821-7700, extension 350. (Missouri residents call 1-800-892-7655, extension 350). Additional details are also available in Sweet's General Building File 10Go; or, write Gold Bond Building Products A National Gypsum Division Dept. PA 2001 Rexford Road Charlotte, North Carolina 28211.

Gold Bond

GB-350

GRAVITY LOCK
Demountable
Partition System

Gold Bond Building Products

A National Gypsum Division

Answers that make the difference.
The Winning Hand

No matter what your "game"—architecture or engineering—you'll recognize that time-and-money-saving drafting systems are extremely important to your profession. STANPAT, the originator of applique drafting, has been dealing the winning (and helping) hands in the field since 1943. Our "full house" of services now includes:

Pressure Sensitive Appliques...custom printed details, diagrams and repetitive items of all kinds; made with removable or permanent adhesive. STANPAT'S are the first and best—and the only ones with a 5-year shelf life guarantee. Can't beat that!

Printed Formats...available on Vellum or Polyester and in a wide range of sizes and thicknesses; single or double sided matte and gridded material can be supplied. Fast service on custom printing (large sizes included). Bet on these winners!

Adhesive Backed Polyester Applique Sheets...make any bond paper copier an effective "draftsman" for sharp, clear reproduction of drawing details and notes...feed perfectly, every time...and with a no-curl feature. Trumps!

Pressure-Sensitive Typing Sheets And Ribbons...sheets are made of specially-formulated matte acetate...accepts typing better than any other film...dimensionally stable; won't shrink or yellow with age...permanent or removable adhesive backing...assorted sizes. Film ribbons fit all major typewriter brands. High cards!

And STANPAT delivery and service are aces-high, too! You'll get no fast shuffle from STANPAT—fill out the coupon below and mail it today for FREE SAMPLES and up-to-date catalog. Or call any of our straight dealers at (516) 883-8400 or 8401.

OK, STANPAT, deal us in; send free samples and catalog to:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Company

Address

City  State  Zip

STANPAT PRODUCTS, INC
366 Main Street, Port Washington, NY 11050

Circle No. 361 on Reader Service Card
And now we're going to give you more!

Only U.S.G. makes a line of sound control ceilings this broad, ranging from economical to elegant.

Prestige ACOUSTONE® mineral acoustical ceilings come in a classic natural fissured look with exclusive integral colors as well as with white frosting highlighting the color. Both regular and FIRECODE® AURATONE® panels and tiles are offered in six attractive patterns, all in washable white.

USG® Gypsum Ceiling Panels provide handsome interior and exterior ceilings at economical cost. They can be ordered unfinished, with gleaming white finish that is textured then baked on, and with textured vinyl films in white and in color.

To meet the present and future demand for these sound control ceilings, U.S.G. is making a major investment in production capacities and research into new features and patterns. Our goal is to make it practical for you to specify a U.S.G. ceiling for every one of your projects. And now we have what it takes to meet your job schedule no matter how critical the timing.
For the high fashion store, a VISTA SONIC™ ceiling combining Auratone performance with optical-clarity mirrored surface.

Fancy, fissured and fire-rated!

**AURATONE® Ceiling Panels and Tiles**

Excellent sound attenuation and good sound absorption distinguish these water-felted, mineral-fiber panels and tiles. Four attractive patterns with easily maintained finish or special plastic coating to resist severe soiling. Available with up to 3-hr. fire-rated designs. For complete details, see your U.S.G. Representative or write to Sound Control Products, 101 S. Wacker Drive, Chicago, Ill. 60606. Dept. PA281B
Until now, to get a berber look like this, I had to buy a very expensive carpet. And I couldn't recommend it for any high traffic areas due to its tendency to "fuzz, pill and stain."

But Amoco Fabric's new olefin berber yarn changes everything. Berber-look carpet using their high denier Marqueta Lana yarn is less than half as expensive as conventional berbers. It withstands even the highest traffic areas with long wear. And the color flexibility is virtually endless.

So if you want to offer your client the best wearing high quality berber, you'll just have to get used to spending less money.


He Got It.
Furniture and decorative arts

Books


The publication of this book marks the 150th anniversary of the company that revolutionized the design and production of modern furniture. In 1830, the German master-craftsman-designer Michael Thonet created the first bentwood chairs, thus beginning a production that continues today and is known throughout the world. In our own century, the company has produced steel and tubular steel furniture by Le Corbusier, André Lurcat, Mies van der Rohe, and Marcel Breuer. In the early 1920s and on through the war period when the factories and showrooms had to close, a single American factory in Long Island City, NY, had to carry much of the load. As author Wilk explains, “It was an assembly plant for bentwood furniture which arrived unassembled from Europe; it served as a factory for chairs, tables and other designs sold only in the U.S.” This book is the first history in English of the world’s largest furniture maker. It is heavily illustrated and includes rare 19th-Century photos from the Thonet catalog and museum collections.

Color clear through for beauty that damage can’t mar!

ACOUSTONE®
Mineral Acoustical Ceiling Panels

America’s prestige ceiling—ACOUSTONE—offers you elegant colors that are not just painted on but moulded right in the mineral fiber base. No more glaring white spots from gouges and scratches. Four earthtones and six natural-texture patterns are standard. Custom-matched colors are available on a special-order basis. For details, see your U.S.G. Representative or write Sound Control Products, 101 S. Wacker Drive, Chicago, Ill. 60606. Dept. PA281D

Circle No. 369 on Reader Service Card
Stark Structural Facing Tile

Better than ceramic tile: Economical. Structural. And permanent.

Why specify block and tile separately, when Stark textured tile gives you the economy of a structural wall and durable face in a single product?

Stark tile is as attractive as it is durable. In fact, in applications like the Akron-Canton Airport shown above, textured tile's deep-relief, random pattern and earthen color encourage innovation in design and atmosphere.

Combines noise control and low maintenance

For those areas where sound control is necessary, specify Stark acoustical tile, available with a glazed or textured face. Both are virtually impervious to heavy traffic and vandalism, never need painting, and provide a sound absorption coefficient of .73.

<table>
<thead>
<tr>
<th>Tile Size</th>
<th>500 CPS</th>
<th>Noise Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>6T</td>
<td>.79</td>
<td>.60</td>
</tr>
<tr>
<td>8W</td>
<td>.73</td>
<td>.55</td>
</tr>
</tbody>
</table>


Akron-Canton Regional Airport, North Canton, OH / Architects: Dansizen & Martin / General Contractor: Gibbons-Grable Company

At least as far back as the 18th Century, when William Kent and Robert Adam designed furniture to function as an integral part of their interiors, noted architects have engaged in this activity to enhance their buildings. Some have been motivated by their definition of architecture as encompassing every detail of a building, while others have wanted to influence the lives of those who live and work in their buildings. Throughout this book, the author explores the architects' reasons for their designs and how they related to their time, place, and contemporaries. Organized in eight chapters, the book spans two centuries in covering the work of those architects who also became noted for their furniture and furnishings.


This international survey traces the development of chair design during the period 1850 to 1950 as seen in the work of over 60 craftsmen, designers, and architects. It includes the work of Alvar Aalto, the Bauhaus, Marcel Breuer, Carlo Bugatti, Le Corbusier, Charles Eames, Eileen Gray, Hector Guimard, Josef Hoffmann, Charles Rennie Mackintosh, Mies van der Rohe, Morris and Co., Pel, Gerrit Thomas Rietveld, Emile-Jacques Ruhlmann, Mart Stam, Thonet, and Frank Lloyd Wright, among others. A discussion of the work of each designer or firm is complemented by biographical information and illustrated with line drawings and photographs, both contemporary and specially commissioned. [Books continued on page 133]
VIP Oak-8600 Series

Available in light and medium oak, accented with a bronze reveal.

The author, who is assistant keeper in the department of painting at the Victoria and Albert Museum, describes the ideals of a generation of dreamers who forsook the gloomy industrial cities of the 19th Century for the quiet dignity of the country, where they reestablished themselves as craftsmen and artists. This book traces the history of the Arts and Crafts movement from its beginnings in England, with such theorists as Ruskin and Morris, through its spread to America and those who dispersed the craftsman ideal here. The volume is lavishly illustrated with many fresh and new examples from the period, including painting, architecture, calligraphy, wallpaper, furniture, and other household objects that were to set the standards for design in the 20th Century.


In this book, the curator of decorative arts at the Chicago Historical Society traces the period when Chicago's decorative arts reflected the influence of the British Arts and Crafts movement. Between 1871, when the Great Fire destroyed the city's business district, and 1933, when the Century of Progress Exposition was held, Chicago's artists, craftsmen, and architects were responsible for some remarkable innovations not only in architecture, but also in the decorative arts. Some, such as Louis Sullivan or Frank Lloyd Wright, have become legends; others, however, are known only to a few specialists or are forgotten altogether. This book focuses on two groups of art products and on those who designed them. The Decorative Arts section discusses small-scaled objects such as handpainted china, art pottery, and cut and engraved glass. The Architectural Arts section deals with the products that were closely tied to architectural trends, such as stained and ornamental glass and architectural terra cotta. A number of causes led to the decline and final demise of the Arts and Crafts movement, but Chicago is perhaps unique in being left with such a rich heritage of handcrafted objects, which are so well documented in this volume.

Put TSM at your fingertips...

with this new, fact-filled catalog!

TSM's new products catalog provides grab bar information you need to know to comply with the latest ANSI standard for barrier-free architecture including:
- NEW expanded line of 1½" wall clearance grab bars.
- NEW DC-3 flange model grab bar (upper left photo).
- NEW ANSI-PAK™ wheelchair shower seat/grab bar kit.
- NEW Installation methods.
- NEW color selection chart for shower seats.
- NEW illustrations showing recommended product use.

So, put all this new product data at your fingertips by requesting your copy of the Tubular Specialties catalog.

TUBULAR SPECIALTIES MFG., INC.,
Dept. 12 • P.O. Box 60382 • Los Angeles, CA 90060
213/515-4801 • Toll free outside Calif.: 800/421-2961

Circle No. 367 on Reader Service Card
Natural Fissured Ceilings. Above all, versatile.

Above all, Natural Fissured ceilings from Conwed. The most versatile designer ceiling you can get. Its subdued natural fissured pattern is quietly handsome in board rooms or private offices. But because Natural Fissured also comes in a full range of panel sizes, you can continue the same attractive look into hallways, lobbies, and other large areas.

Find out about the entire Conwed® Natural Fissured line. It gives you six different sizes, six edge treatments and two thicknesses to choose from. All are available U.L. time-design fire rated.

For more information, see Sweets File 9.1/Co or contact Conwed Corporation, Ceiling Products Division, P.O. Box 43237, St. Paul, Minnesota 55164. Phone (612) 221-1184.
INTERNATIONAL
THE BUILDING INDUSTRY SHOW

Montréal
March 23-April 1
1981
Olympic Stadium

REQUEST FOR EXHIBITOR'S KIT

NAME ____________________________ TITLE ____________________________
COMPANY __________________________ CITY ____________________________
ADDRESS ____________________________ CODE ____________________________
PROV.-STATE __________________________ COUNTRY ____________________________
TELEPHONE ____________________________ TELEX ____________________________

Return to: EXPOMAT CANADA, 1117 Ste-Catherine Street W., Room 306, Montréal, Québec, Canada H3B 1H9 — Phone: (514) 842-1431 — Telex: 05561934 Batimat Mtl

Circle No. 380 on Reader Service Card
For construction products manufacturers and marketers who must have current and reliable information on which to base critical planning decisions...

"Marketing Dynamics in a Technical Decade"

Make plans now to participate in this two-day conference, packed with up-to-the minute information, presented by industry authorities and covering subjects like these:

- Keynoter: George Christie, economist, McGraw-Hill.
- Syntfuels impact on building product growth.
- Commercial rehabilitation.
- Pre-engineered buildings: a major market for building products.
- New product introduction.
- Demographic forecasts: commercial and residential.
- New forms of commercial and residential financing.
- Measuring opportunity: information systems and statistics.
- Effective sales force deployment in the '80's.
- Design concerns of the '80's.
- Effectiveness of field sales personnel.
- Distributor training.
- Government update.
- Wall Street's view of the construction industry.

For registration materials and more details on the program, fill out and return this coupon today.

Sponsored by

CONSTRUCTION PRODUCTS MANUFACTURERS COUNCIL

April 29 — May 1
O'Hare Marriott Hotel
Chicago, Illinois

Registration Fees
1st CPMC member-company registrant: $295
All other member registrants: $250
Non-CPMC members: $295

To Construction Products Manufacturers Council
1600 Wilson Blvd. Arlington, Virginia 22209

Please send me registration materials and program details on CPMC's "Marketing Dynamics in a Technical Decade".

☐ My company is a CPMC member.
☐ My company is not a CPMC member.

Name __________________________
Title __________________________
Company _________________________
Address __________________________
City __________________ State ____ ZIP _______
**For exposed beam ceilings, Easy-Ply Roof Decking has the ceiling side laminated with a prefinished decorative vapor barrier. A tough, structural roof deck plus a finished ceiling, too. That's R/35 PLUS.**

**Homasote Easy-Ply® Roof Decking** is 2¾” thick in nominal 2'x8' panels, with long edges T & G. Ceiling side is a white vinyl film which provides a prefinished, decorative vapor barrier.

**Thermasote®** is a composite of strong asbestos-free, insulating and weather resistant Homasote structural building board plus polyurethane foam and a bottom surface of asphalt saturated felt. It is a nail base insulation for application to Easy-Ply, wood or metal decking.

**The R/35 PLUS roof insulation system** is the result of combining 4” Thermasote, 2¾” Easy-Ply Roof Decking and asphalt, fiberglass, wood shingles or roofing tile. As easy as one, two, three—roof deck with a prefinished ceiling, roof insulation and finish roofing. Other thicknesses and R values available. Use the coupon for full data and samples.

Mail to: **Homasote Company** P.O. Box 7240 West Trenton, NJ 08628

Please rush information about R/35 PLUS for open beam roof system.

Name

Company

Street

City

State

Zip

Phone

Circle No. 337 on Reader Service Card
Products and literature

The following items are related to the technics article about moistureproofing. They are grouped here for the convenience of the reader.

Moistureproofing Products

Silglaze® 2400 silicone sealant will adhere to a wide variety of construction materials. It can be used in glazing, curtain-wall sealing, and butt glazing, and can be factory or field applied. According to the manufacturer, it retains its original properties after many years of exposure to weathering cycles. The sealant comes in four standard colors: clear, black, aluminum/gray, and bronze. General Electric Co., Silicone Products Dept. Circle 129 on reader service card

Silicone building sealant 795 is a one-part silicone rubber product that cures at room temperature upon exposure to air. It is easily extruded at any temperature and produces a durable, flexible seal. It bonds to most construction materials without the use of a primer. The manufacturer says that it is unaffected by sunlight, snow, rain, or ozone and stays elastomeric at temperatures from -65 F to 300 F without hardening or becoming brittle. It is used for weatherproofing building joints, for glazing glass, metals, and plastics, and for perimeter sealing. Dow Corning Corp. Circle 130 on reader service card

Evazote 50 waterstop and joint seal combines foamed, closed-cell ethylene vinyl acetate and an epoxy bonding agent. For use in construction, it is said to retain its waterproofing integrity under strain of lateral, vertical, and diagonal movement of the joint. The product withstands extremes of temperature and bonds to concrete, brick, metals, marble, plastic, and glass. It is available in a number of colors. E-Poxy Industries, Inc. Circle 131 on reader service card

Moistureproofing Literature

Silpruf® joint sealant Spec-Data sheet describes the silicone sealant and discusses and illustrates its use in various types of construction joints. Tables supply data on typical properties and adhesion characteristics. Information is also included on preparatory work and methods of application. General Electric Co., Silicone Products Div. Circle 200 on reader service card

Architectural Guidelines for Total Waterproofing Systems describes several products for use in exterior and interior waterproofing applications, such as slab construction and foundation walls. Products include one- and two-part polyurethane formulations and one-part hot-applied or cold-applied rubberized asphalt. Drawings show how the materials are applied in treating cracks, metal penetrations, drains, expansion joints, and decks. Tremco. Circle 201 on reader service card

Guide for Sealed Joint Design, by K.K. Karpati, discusses the principles of joint design in the order in which they are encountered. It covers the properties to consider in the selection of sealants to accommodate joint movement, resist weathering, and retain waterproofing characteristics. Copies are 50¢ each, prepaid (no stamps), with checks payable to the Receiver General of Canada.
The installation procedures and product limitations of Sonneborn Building Products, Div. of Contech, Inc. are discussed. The company offers a large executive desk, general office desk, secretarial desk, and a small, single-pedestal model. There is also a matching credenza.

Other products

Pull-up chair #6632 from the 4/6 group, for office, lounge, or conference room, has a curved hardwood frame with open arms and an upholstered back and seat. It comes in a choice of five wood finishes and a variety of upholstery fabrics and leathers. Carolina Seating Co.

Two modular tables include a drawing table and a light table. The drawing table has a heavy-duty plastic laminate surface on a top that is adjustable to a convenient angle. The light table, with adjustable top, has an evenly diffused lighting source. Units, which are shipped knocked down, can be assembled easily. Foster Manufacturing Co.

The 3600 line of steel office desks is offered in a selection of colors including four new pastels. The group includes a large executive desk, general office desk with double pedestal, secretarial desk with a typing return, and a small, single-pedestal model. There is also a matching credenza. Storwall International Inc.

Two modular tables include a drawing table and a light table. The drawing table has a heavy-duty plastic laminate surface on a top that is adjustable to a convenient angle. The light table, with adjustable top, has an evenly diffused lighting source. Units, which are shipped knocked down, can be assembled easily. Foster Manufacturing Co.

Reflections lighting, for use with 400-watt high-pressure sodium or 250-watt metal halide lamps, can be mounted on walls or columns or suspended on hangers. The unit has a mirror-finish aluminum reflector and is designed to provide glare-free, shadow-free lighting at the work surface. According to the manufacturer, adequate lighting can be achieved with fewer fixtures, reducing maintenance costs and decreasing the air-conditioning load. Guth Lighting.

Neon lamp sculptures in contemporary designs for interior use require no installation or wiring. They plug into any outlet and take lower current than conventional lamps. Say It In Neon, Inc.

Spiral or straight stairs of all-metal construction for commercial or industrial applications are made to opening and ceiling height specifications. The metal treads can be carpeted easily. Ornamental inserts are available to fill in between balusters. Spirals can be clockwise or counterclockwise. Toce Brothers Manufacturing Ltd.

Neon lamp sculptures in contemporary designs for interior use require no installation or wiring. They plug into any outlet and take lower current than conventional lamps. Say It In Neon, Inc.

Aquatrol® penetrating finish protects exterior wood shingles, shakes, and siding against moisture absorption. The low-odor, low-solvent finish does not crack, peel, or allow deterioration of wood substrates from the effects of sun or rain. It reacts with sunlight to restore woodtone color to wood that has weathered to a light gray. The Flood Co.

Products continued on page 144.
**VENTARAMA® skylight**

Skylighting is the way to create beautiful light-filled rooms, to add new dimension and greater flexibility to interior and exterior designs.

VENTARAMA SKYLIGHTS OFFER PASSIVE SOLAR HEAT, NATURAL AIR CONDITIONING, and can be used in any climate on any roof.

- COPPER FLASHED
- SHATTER-PROOF
- INSULATED DOME
- SCREENING AND SUNSHADE
- OPERABLE BY MANUAL, POLE, OR ELECTRIC MOTOR

VENTARAMA® SKYLIGHT CORPORATION
75 Channel Drive. Port Washington. New York 11050 (516) 883-5000

Get the specific help you need... fast

The indispensable resource for solving engineering and architectural problems encountered in any stage of a building project

HANDBOOK OF CONSTRUCTION RESOURCES & SUPPORT SERVICES Edited by J.A. MacDonald

Unique in its scope and coverage, this comprehensive new directory gives you instant access to the information resources and support services available for solving virtually any engineering or construction problem commonly encountered on a project... from preliminary design studies to completed facilities management.

This Handbook puts you in touch with professional societies, technical and trade organizations, manufacturing associations, specialty consultants, government agencies, data centers, and many other types of resources. It explains each organization's type of services offered, key contacts, basis for remuneration, and much more. The Handbook is organized topically, indexed by name as well as geographically... A ready reference you can’t afford to be without.

JOHN WILEY & SONS, Inc., 605 Third Avenue, New York, N.Y. 10158

Available at your local bookstore or use this coupon to order.

Please send this book for 15-DAY FREE EXAMINATION (Restricted to the continental U.S. and Canada.)

☐ MacDonald / Handbook of Construction Resources and Support Services
0 471 09354-8 approx 593 pp. $49.50

MAIL TO: JOHN WILEY & SONS, Inc., 605 Third Avenue, New York, N.Y. 10158
Attn: L Ramos

☐ Payment enclosed, plus sales tax. Wiley pays postage/handling. We normally ship within 10 days. If shipment cannot be made within 90 days, payment will be refunded.
☐ Bill me. ☐ Bill firm or institution.

NAME
AFFILIATION
ADDRESS
CITY
STATE/ZIP

SIGN HERE
Prices subject to change without notice

KENNETH LYNCH & SONS
TRADITIONAL CRAFTSMEN
DEPT. P 78 DANBURY ROAD WILTON, CT 06897
(203) 762-8363
The most durable floor is the least expensive to own.

PermaGrain® natural wood flooring. 30% less expensive than vinyl. And terrazzo, quarry tile, nylon carpeting, and conventional wood flooring based on life cycle costs. 500% longer life than even epoxy terrazzo.

Good reasons you might choose PermaGrain.

But the best reason is more obvious: its beauty.

And beauty, cost-effectiveness, and long life is a combination for which PermaGrain is unsurpassed.

For beauty, The American Society of Interior Designers gave PermaGrain its highest award.

Cost-effectiveness is proved. When contract-quality flooring is compared under identical, high traffic conditions and a 20-year life expectancy, PermaGrain can save from 6% to 42% on life cycle costs. At 50 years, PermaGrain's estimated full life expectancy, savings jump to record levels between 21% and 55%. One reason: PermaGrain never needs refinishing.

Maintenance? With PermaGrain, you can forget soap — water — wax. Simply dust mop. And occasionally mist on some cleaner and machine polish to a showcase elegance.


Circle No. 346 on Reader Service Card
Building materials

Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.


Thermacore industrial or commercial doors have outer sheets of Bethlehem Steel's Galvalume with a polyurethane core. The foam is inserted between the steel sheets while they are hot and expands to fill the cavity, bonding to the hot metal. Separation of the two metal surfaces with insulation provides a thermal break. EPDM rubber seals the door at the top, sides, floor, and between sections. Insopy Industries, Inc. Circle 139 on reader service card

LetterSpec® is a system of programmed signs that are predesigned to accommodate direction, identification, information, and regulation messages. Standard signs are brown-bronze with white Helvetica medium type. They can be mounted on ceilings, walls, or doors. Four of the thirteen types have changeable magnetic inserts; five have the option of raised letters and braille. The system is recommended for use in hospitals to provide uniform signage at a reasonable cost. Jack Weiss Associates. Circle 140 on reader service card

Imagine... ...no wood nailer!
On a scale of 1 to 10, we're a 24.

24 muted color combos of PEBBLE BEACH. Soft neutrals and rich, understated primaries in a nylon designed in the tradition and texture of wool.

24 delicious, solid colors of WILSHIRE. A basic nylon which provides a taste of classic simplicity.

24 dynamic colors of NOB HILL. A bulky yarn nylon which adds a new dimension to any application.

All three upholstery and wall covering fabrics are exclusive and available only from Frankel Associates. All provide the durability and practicality of 100% nylon, are flame retardant and soil and stain repellent.

24 hours a day, Frankel offers the competitive pricing, professional service and inventory position that assures the realization of your vision. For samples and information about our complete line of contract fabrics, call us at 212/679-8388.

Frankel... for the fabrics of your vision.

FRANKEL ASSOCIATES, INC.
1122 Broadway, New York, New York 10010

Atlanta: 404/438-1424
Cleveland: 216/591-0896
Los Angeles: 213/978-1421
New York: 212/679-0386
Philadelphia: 215/339-3600
San Francisco: 415/981-6434
This is a factory?

Strong forms and bold colors give the Qume Corporation facilities in San Jose, CA, a distinctly un-factorylike appearance. On the outside, Inryco/wall IW-11A panels in postal blue and boysenberry are curved in graceful contours to break up the geometric rectangles of long, low sandstone beige walls.

Inside, the same type of panels in boysenberry and suede brown frame a skylit garden atrium that runs the full length of the building between office and plant areas. Qume Corporation wanted a pleasant atmosphere for its employees, and the design team won a 1980 AIA Honor Award in providing it.

The energy efficient Inryco/wall panels are coated with long-life, low-maintenance, two-coat Duofinish over a galvanized steel base. For more data contact your Inryco representative or INRYCO, Inc., Building Panels Div., Dept. B-4069, P.O. Box 393, Milwaukee, WI 53201.

Circle No. 340 on Reader Service Card

Inryco
an Inland Steel company
The elegance
of beveled glass

...in more than one hundred designs and sizes, for
doors, sidelites, windows, tables and pedestals.
Available from open stock.

DR1003 21½" x 66½"; DR1003W 27½" x 66¼" Sidelite: DS2003 12" x 72"

For new catalog of designs, send $3.00 to nearest distributor, or to our General Office.

Visit us during WESTWEEK at the
Pacific Design Center, Space 396
Here, for the first time in this century, is an opportunity to re-examine the philosophy of the Beaux-Arts school of architecture.
organized explanation of his value delin- 
edation system, the author presents a de- 
tailed description of the process which 
has resulted in these award- 

NEW* 
12 Encyclopedia of 
Americam Architecture 
By William Dudley Hunt, Jr. 
612 pp., illus. . . . $39.95 

The homes collected in this informa-
tive guide represent a broad spectrum of 
imaginative architectural design. Floor plans and interior views of 56 

18 Furniture 
Designed by Architects 
By Marian Page, 
224 pp., illus. . . . $25.00 

This well-illustrated volume features 26 prominent architects whose work, 
spanning two centuries, encompasses 
a broad spectrum of styles. The author explores the architects' 
reasons for their designs, as well as how they related to their time, place 
and contemporaries. 

20 Trees for Architecture 
and the Landscape 
Condensed Edition 
By Robert L Zion 
206 pp., illus. . . . $11.95 

This attractive book will aid communication 
between landscape architect, 
architect and layman with a compre- 
hensive collection of photographic 
portraits of trees whose structure, 
habit, and other characteristics make 
them especially useful in relation to 
buildings and outdoor spaces. 

14 Architectural Illustration 
The Value Delineation Process 
By Paul Stevenson Odes 
288 pp., illus. . . . $34.50 

In this copiously illustrated, clearly or- 

many components, props and ele- 

ments in terms of setting, mood and 
composition for both residential and 
commercial projects. 

21 Design Cost Analysis 
for Architects & Engineers 
By Herbert Swinburne, 
317 pp., illus. . . . $24.95 

This first-of-its-kind book shows architects and engineers how to 
analyze and estimate the costs of 
building construction during the de-

19 Architectural Stained Glass 
Edited by Brian Clarke 
234 pp., illus. . . . $32.95. 

The contributors to this book (through 
their stunning designs) emphasize 
the potential for new and old 
buildings to better effect, changed 
some copy in the text, and incorpo-
rate fact and data that is recent. 

The consensus of opinion by many 
architects and architectural 
experts is that recycling is here to stay and to ex-

23 By Their Own Design 
Edited by Abby Suckle, 
160 pp., illus. . . . $19.95 

This one-volume library on architectural 
rendering shows how to render the 

11 Public Relations for the 
Design Professional 
By Gene Jones, 
278 pp., illus. . . . $21.50 

An authoritative book on public rela-
tions written in easily understood 
language for architects, engineers and 
other design professionals. Ex-
plains how to plan, set up and carry 
out a PR program that meets special 
requirements, as well as how to take 
advantage of some often overlooked 
opportunities for free publicity from 
the media. 

NEW* 
10 Leisure Homes 
By A. W. Lees with E. V. Hyen. 
320 pp., illus. . . . $18.95 

The homes collected in this informa-
tive guide represent a broad spectrum of 
imaginative architectural design. Floor plans and interior views of 56 

18 Design Cost Analysis 
for Architects & Engineers 
By Herbert Swinburne, 
317 pp., illus. . . . $24.95 

This first-of-its-kind book shows architects and engineers how to 
analyze and estimate the costs of 
building construction during the de-

19 Architectural Stained Glass 
Edited by Brian Clarke 
234 pp., illus. . . . $32.95. 

The contributors to this book (through 
their stunning designs) emphasize 
the potential for new and old 
buildings to better effect, changed 
some copy in the text, and incorpo-
rate fact and data that is recent. 

The consensus of opinion by many 
architects and architectural 
experts is that recycling is here to stay and to ex-

23 By Their Own Design 
Edited by Abby Suckle, 
160 pp., illus. . . . $19.95 

This one-volume library on architectural 
rendering shows how to render the 

11 Public Relations for the 
Design Professional 
By Gene Jones, 
278 pp., illus. . . . $21.50 

An authoritative book on public rela-
tions written in easily understood 
language for architects, engineers and 
other design professionals. Ex-
plains how to plan, set up and carry 
out a PR program that meets special 
requirements, as well as how to take 
advantage of some often overlooked 
opportunities for free publicity from 
the media. 

NEW* 
10 Leisure Homes 
By A. W. Lees with E. V. Hyen. 
320 pp., illus. . . . $18.95 

The homes collected in this informa-
tive guide represent a broad spectrum of 
imaginative architectural design. Floor plans and interior views of 56 

18 Design Cost Analysis 
for Architects & Engineers 
By Herbert Swinburne, 
317 pp., illus. . . . $24.95 

This first-of-its-kind book shows architects and engineers how to 
analyze and estimate the costs of 
building construction during the de-

19 Architectural Stained Glass 
Edited by Brian Clarke 
234 pp., illus. . . . $32.95. 

The contributors to this book (through 
their stunning designs) emphasize 
the potential for new and old 
buildings to better effect, changed 
some copy in the text, and incorpo-
rate fact and data that is recent. 

The consensus of opinion by many 
architects and architectural 
experts is that recycling is here to stay and to ex-

23 By Their Own Design 
Edited by Abby Suckle, 
160 pp., illus. . . . $19.95 

This one-volume library on architectural 
rendering shows how to render the

Saddlebrook is a great new idea for your next FLORIDA VACATION

It's new! Different! Elegant and exciting!
Saddlebrook, Florida's unique golf and tennis resort.
Why is it unique?
Because you live in a luxurious one, two or three-bedroom condominium suite instead of a hotel room at a comparable price!
Because you play golf on rolling fairways and undulating greens amid lofty pines, stands of cypress sprinkled with sparkling ponds and bayheads. It's "Northern" golf in the South. But that's not all.
There's tennis and swimming and dining and just plain relaxing while you're being pampered by a courteous, magnificently trained staff. Trained to make your vacation at Saddlebrook a genuinely pleasurable experience.
Saddlebrook is no more than 90 minutes away from "almost everything" in Florida... Disney World (90 minutes), Busch Gardens (15 minutes), Cypress Gardens (60 minutes), Weeki Wachee (45 minutes), Circus World (60 minutes), Sea World (75 minutes), beaches (50 minutes), just to mention a few attractions.
Just 25 minutes from Tampa's International Airport... on Route 1-75... there's not a single traffic light between you and our front gate. Drive yourself, or use our limo service.

For a personal condominium resort vacation that offers you a whole lot more and costs you a whole lot less, contact your travel agent. Or call toll free 800/237-7519.
In Florida call 813/973-1111.

Circle No. 354 on Reader Service Card
Symbolic statements will be the title of an introductory article, with presentations on three major buildings of civic consequence to communities they serve:

The National Center for Performing Arts in Bombay, designed by Johnson/Burgee embodies the aspirations of the city and the nation of India for a setting to match the elegance and detachment of Indian music; it stands boldly on a prominent site along the harbor.

The Parliament House in Canberra design by Mitchell/ Giurgola and Thorp will, when built, fulfill Walter Burley Griffin’s vision for a grandness appropriate to Australia in its capital city; P/A shows the competition winning design and discusses it in detail.

The Provincial Courts complex in Vancouver, by architect Arthur Erickson, represents the provincial government’s presence in a downtown core in a way that is at once powerful and self-effacing; P/A will critically analyze the effect of this unconventional urban monument.

In the same issue, P/A will examine two distinguished new monasteries—one in Spain and one in Nebraska—the latter the subject of a P/A Energy Analysis. Interior design pages will feature two refreshing new restaurants in Washington, D.C.

P/A in April will be a very special issue—the third annual one on Energy-conscious design. This year, the editors have been able to examine a larger number than ever of outstanding completed buildings that are lessons in energy conservation without sacrifice of the other qualities of fine architecture. Also in this issue will be an expanded Technics section on the frontiers of energy research and technology—along with energy-related news, product pages, and book reviews.
**Job Mart**

**Situations Open**

**Architects:** Tampa architectural firm has positions open and available for experienced architects. Our practice includes office buildings, hotels, commercial, industrial and institutional projects for both public and private clients. We are looking for experience in the areas of project management, design, documentation and construction administration. We offer competitive compensation and career opportunities. Submit resume to George R. McElvey, McElvey, Jemmewin Steffey & Howard, Architects/Planners, Inc., 102 W. Whiting Street, Suite 502, Tampa, FL 33602.

**Architect Designer:** Position available with prominent full-service architectural-engineering firm that offers exceptional opportunities for career progress. Must have demonstrated design of diversified major projects. Qualifications include master's degree (desirable but not mandatory), minimum four years of comprehensive design experience and ability to interact professionally to an accredited and successful design clientele. Challenging position with emphasis on design excellence. Particularly good opportunity for growth with firm. Salary commensurate with experience and capability. Paid moving expenses. Send resume in full confidence to: Box 1361-367, Progressive Architecture. An Equal Opportunity Employer.

**Architects, Engineers, Draftsmen:** ALSA, a leading international A/E firm, is currently seeking experienced professionals for short, yet challenging one-year contracts in Saudi Arabia in exchange for truly exceptional compensation. Project Architects, Project Engineers—C.E., M.E., E.E., and Head Draftsmen in all disciplines with a minimum of 5 yrs. exp. will receive an excellent package of liberal income, profit sharing potential, and vacation benefits plus travel, room, and board. These single status assignments also provide great savings opportunities. Please forward your resume for immediate confidential consideration to Craig Sharp, ALSA, 3500 Henderson Blvd., Tampa, FL 33609.

**Architectural Specification Writer:** Needed for Architectural and Engineering firm. Bachelor degree (3-5 yrs. experience) and/or equivalent required. Must have strong background in construction materials, specifications, and ability to lead project teams of professionals and office staff. Excellent organization skills and communication abilities required. Submit resume to: Skidmore, Owings & Merrill, 5251 Wesheimer Suite 200, Houston, TX 77056, Attn: E.L. Thompson.

**Chairperson, Department of Architecture:** Effective August 1981. Requires Master's in Architecture or equivalent and professional experience. Demonstrated ability in teaching, professional practice, administration and research. Position entails leading academic program consisting of a four-year undergraduate plus two-year graduate. MS degree and/or equivalent required. Must have demonstrated experience in accredited Master's degree of architecture program. Serve as primary liaison between college dean and departmental faculty. Represent the department in relationships with students and other departments within the University plus the profession and the public. Apply by March 15 to: Mr. Jim Porter, Search Committee Chairperson, College of Architecture, The University of Nebraska-Lincoln, Lincoln, Neb 68588. Affirmative Action/Equal Opportunity Employer.

**Chairperson, Department of Architecture, SUNY at Buffalo:** The position of Chairperson, Dept. of Architecture, School of Architecture and Environmental Design, State University of New York at Buffalo is open. The position requires an experienced person who has achieved distinguished work in academic and/or the profession, with ability in administration. With 200+ students in full-time and part-time programs in the Department of Architecture largest in the School, which includes the Department of Environmental Design and Planning and the Department of Design Studies, all of which are administered by the Architectural Design program starts at the junior year level, and leads to a pre-professional undergraduate degree. The M.Arch. is offered as the first professional degree, and the department expects to develop a specialized advanced Masters program. The Department is young, developing and fully accredited. Its faculty is diverse and is involved in professional work as well as research. SUNYAB is an Affirmative Action/Equal Opportunity Employer. Applications with curriculum vitae, samples of work and three references immediately to: Prof. Gunter Schmitz, Search Chair, Department of Architecture, Hayes Hall, SUNY/Buffalo, Buffalo, NY 14214.

**Code Analyst:** City of Clearwater, Florida. Reviewing and analyzing permit applications, plans and specifications against code requirements. Requires four year degree in Architecture or related field, i.e., Engineering or Building Construction. Salary Range $16,676 to $24,710. Send resume to Personnel Department, City of Clearwater, Fl 33755 by March 31, 1981. An Equal Employment/Affirmative Action Employer.

**Department of Architecture—State University of New York at Buffalo:** Assistant or associate professor starting September 1981 to teach required and elective courses in structures and develop this area of curriculum; also participate in studio program. Degree (Master's or Ph.D. in architectural engineering or structural engineering or previous teaching experience and dual degrees preferred). Salary according to rank and qualifications. Applicants should send: Curriculum vitae and letters of recommendation to: Prof. G. Schmitz, Chairman, Search Committee, Department of Architecture, School of Architecture & Environmental Design, Hayes Hall, State University of New York, Buffalo, NY 14214, SUNYAB is an EO/AA Employer.

**Director: To reorganize and direct the School of Architecture, develop graduate programs; research and curriculum refinement. Candidates should show evidence of administrative ability. Professional degree in architecture or equivalent required. Master's degree preferred. Salary commensurate with qualifications and experience. Application deadline is March 10, 1981. Send resume, three references and a statement of current professional interests to: Deans' Office, College of Design, Louisiana State University, Baton Rouge, LA 70803 (Telephone (504) 388-5400). LSU is an Equal Opportunity/Affirmative Action Employer.


**Faculty Position:** Nine-month appointment beginning September 1, 1981: Assistant Professor rank. Salary commensurate with qualifications. Teach studio courses in advanced architectural design in undergraduate/graduate professional degree. Secondary responsibilities to complement special interests. Qualifications: Graduate, second professional degree in Architecture, teaching experience in advanced architectural design studio as graduate assistant or faculty member. Professional practice and registration desirable. Application deadline: March 1, 1981. Send resume, three references, and examples of past work done under your direction to Richard Dodge, Chairperson, Faculty Search Committee, School of Architecture, The University of Texas at Austin, Austin, TX 78712. Hal Box, Dean. An Equal Opportunity Employer.

**Faculty Positions:** The College of Architecture of King Faisal University in Dammam, Saudi Arabia, has created new faculty positions for the academic year 1981-82. Positions available at all levels in the following areas: Architecture, Urban and Regional Planning, Landscape Architecture, Engineering Sciences, Building Engineering, Mathematics, Physics, and Computer Sciences. Candidates should have Ph.D., M.A., or equivalent degree; practical and/or teaching experience preferred. Language of instruction is English. Positions start in September 1981. Salary is competitive and negotiable. Benefits include free furnished accommodations, air tickets to and from Saudi Arabia once a year for husband, wife and 2 children, 60-day summer holiday. Please submit curriculum vitae (including telephone numbers) and a listing of three references to: Dean Ahmed Farid Moustapha, College of Architecture, King Faisal University, c/o Saudi Arabian Educational Mission, 2425 West Loop South, Houston, TX 77027.

**Faculty Position:** Nine-month full-professor appointment beginning September 1, 1981, or January 15, 1982. Salary negotiable depending on experience and previous record. Teach advanced courses at undergraduate and graduate level. Qualifications: Distinguished record of achievement in the fields of architectural practice, urban design, and/or teaching experience, including significant research, professional practice, teaching, and public service. Graduate, second professional degree in Architecture and teaching experience at graduate level required. Application deadline: March 1, 1981. Send resume to and request three letters of recommendation to be sent to: Richard Dodge, Chairman, Faculty Search Committee, School of Architecture, P.O. Box 7988, University of Texas, Austin, TX 78712. Hal Box, Dean. An Equal Opportunity Employer.

**Interior Design:** Tenure track assistant professor position beginning September 1, 1981, for outstanding designer competent in all phases of interior design-space planning. Teaching and research. Master's degree or equivalent professional experience. Salary commensurate with qualifications. Send resume, three references and three letters to Bill Sims, Chairman, Design & Environmental Analysis, N.Y.S. College of Human Ecology, Cornell University, Ithaca, NY 14853 by March 1, 1981. Equal Opportunity/Affirmative Action Employer.

**Interior Design Faculty:** 1 or 2 positions open at Assistant/Associate professor level or beginning September 1, 1981 for outstanding designer competent in all phases of interior design-space planning. Teaching and research. Master's degree or equivalent professional experience. Salary commensurate with qualifications. Send resume, three references and three letters to Bill Sims, Chairman, Design & Environmental Analysis, N.Y.S. College of Human Ecology, Cornell University, Ithaca, NY 14853 by March 1, 1981. Equal Opportunity/Affirmative Action Employer.

**Interior Design Search Committee:** 1 or 2 positions open at Assistant/Associate professor level or beginning September 1, 1981 for outstanding designer competent in all phases of interior design-space planning. Teaching and research. Master's degree or equivalent professional experience. Salary commensurate with qualifications. Send resume, three references and three letters to: Ronald W. Haase, Chairman, Interior Design Search Committee, College of Architecture, 531 GBP, University of Florida,
California Polytechnic State University Faculty Positions

ONE-YEAR LECTURESHIPS available for the 1981-82 academic year. Teaching areas include (a) two- and three-dimensional design and environmental awareness, (b) architectural design and practice, (c) environmental control systems, and (d) computer applications. (1) Assistant Professor range ($17,964-$21,600). Required are Master of Architecture or other appropriate master's degree with at least one year professional practice experience, or professional degree and three years professional experience. Teaching experience at collegiate level and professional license are desirable. (2) Associate Professor range ($22,620-$27,252). In addition to qualifications for Assistant Professor, required are: A minimum of seven years collegiate level teaching and/or professional experience, and professional license. Research experience and publications desirable. (3) Professor range ($26,960-$34,478). In addition to qualifications for Associate Professor, required are: Extensive practice and/or teaching experience, publications, and professional recognition/distinction.

TENURE TRACK POSITIONS IN ARCHITECTURAL DESIGN, PRACTICE AND DESIGN FUNDAMENTALS: Assistant Professor, three positions. (1) Assistant Professor ($17,964-$21,600). Required are Master of Architecture or other appropriate master's degree with at least three years professional practice experience. Teaching experience at collegiate level and professional license are desirable. (2) Associate Professor ($22,620-$27,252). In addition to the qualifications for Assistant Professor, required is a minimum of seven years collegiate level teaching and/or professional experience, and professional license. Research experience and publications are desirable.

TENURE TRACK ASSISTANT/ASSOCIATE/FULL PROFESSOR FOR BUILDING SUPPORT SYSTEMS COURSES: Principles of design and equipment for electrical, plumbing, HVAC, vertical transportation systems, and principles of utilization of alternative energy sources. Required is a master's degree in architecture or related field with emphasis on electrical or mechanical systems for buildings; professional experience with architectural or engineering consulting firms. Professional license, Ph.D., teaching experience at collegiate level and extensive practice preferred. $17,964-$34,478 for a nine-month academic year, depending upon qualifications.

Send curriculum vitae, specified teaching area, and a request for an application to: Chairperson of Selection Committee, Architecture Department, School of Architecture and Environmental Design, California Polytechnic State University, 550 High Street, San Luis Obispo, California 93407. Phone (805) 546-1316. Closing date: March 15, 1981. Application deadline: March 6, 1981. California Polytechnic State University. San Luis Obispo, California 93407. Phone (805) 546-1316. Closing date: March 6, 1981.

Chairperson of Selection Committee, Architecture Department. School of Architecture or related field with emphasis on electrical or mechanical systems for buildings; professional experience with architectural or engineering consulting firms. Professional license, Ph.D., teaching experience at collegiate level and extensive practice preferred. $17,964-$34,478 for a nine-month academic year, depending upon qualifications.

Send curriculum vitae, specified teaching area, and a request for an application to: Chairperson of Selection Committee, Architecture Department, School of Architecture and Environmental Design, California Polytechnic State University, 550 High Street, San Luis Obispo, California 93407. Phone (805) 546-1316. Closing date: March 6, 1981. Affirmative Action/Equal Opportunity Title IX Employer.

TENURE TRACK ASSISTANT/ASSOCIATE/FULL PROFESSOR FOR BUILDING SUPPORT SYSTEMS COURSES: Principles of design and equipment for electrical, plumbing, HVAC, vertical transportation systems, and principles of utilization of alternative energy sources. Required is a master's degree in architecture or related field with emphasis on electrical or mechanical systems for buildings; professional experience with architectural or engineering consulting firms. Professional license, Ph.D., teaching experience at collegiate level and extensive practice preferred. $17,964-$34,478 for a nine-month academic year, depending upon qualifications.

Send curriculum vitae, specified teaching area, and a request for an application to: Chairperson of Selection Committee, Architecture Department, School of Architecture and Environmental Design, California Polytechnic State University, 550 High Street, San Luis Obispo, California 93407. Phone (805) 546-1316. Closing date: March 6, 1981. Affirmative Action/Equal Opportunity Title IX Employer.

Two faculty positions: Assistant/Associate Professor of Industrial Design, The Ohio State University, Columbus, Ohio 43210. Requirements: Master's Degree or its equivalent, three years minimum for the Assistant Professor and six years minimum for the Associate Professor in professional visual communication design experience, some teaching experience preferred. Salary $20,000 and up; 9-month tenure track, starts October 1, 1981. For further information about positions and teaching responsibilities, contact Charles Wallschlaeger, Chairman, (614) 422-2795. We are an Equal Opportunity/Affirmative Action Employer.

Wanted: Independent Manufacturer's Representative, dealers, sales agents or distributors to sell the architectural interiors products market. Send your curriculum vitae, specifying teaching area, including product specialty, territory and present roster of companies represented to: Box 1361-368, Progressive Architecture.

Architectural Services


Rita Sue Siegal Agency: The leaders in international search and placement of design professionals. Ms. Woody Gibson directs architecture and interior assignments. Please inquire about the range of services we provide. 60 W. 55 Street, NYC 10019, (212) 867-4750.

Advertisers

Aco Drain, Inc. 119
Advanced Coating Technology 118
GarthSmith/Westheimer & Associates, Inc. 116
Alma Desk Co. 153
Lang, Haynes & Carr, Inc. 153
Amarilie Anaconda 41
Cargill, Wilson & Aver, Inc. 41
Amoco Fabrics Co. 126
Studdard-Harris, Inc. 126
Amsterdam Corp. 56
Adams Advertising Agency, Inc. 56
Amweld Door Co. 20
Wern, Russak, Locke Advertising 20
Anderson Corp. 26, 27
Campbell-Mithun, Inc. 26
Armstrong Cork Corp. C-2, 1, 2, 3, 5, 5
Marcelleti, Inc. 37
Ball Metal & Chemical Div., Ball Corp. 25
Charles Timbrau Advertising 25
Batimat International Building Industry Show 135
Batimat International Building Industry Show 135
Beveled Glass Industries 147
The Broncom Company 147
Bradley Corp. 37
Hoffman-York, Inc. 37
Carpenter, L.E. Co. 65
The Swell Co., Inc. 65
Celotex Corp. 138, 159
Mike Sloan, Inc. 159
CHEMFAB/Birdair Structures Div. 58, 59
Woodard Ashley Eggers & Schiffler, Inc. 58
Concrete Reinforcing Steel Institute 46
Marcellero, Inc. 46
Construction Producers Manufacturing Council 156
Continental Custom Bridge Co. 147
Consed Corp. 154
Stevenson & Associates, Inc. 154
CYRO Industries 47
Gray & Rogers, Inc. 47
Delta Air Lines 44
Burke Dowling Adams, Inc. 44
Dover Corp., Elevator Div. 23
Calvallow/Bartlett/Wood 23
Dow Chemical U.S.A. 10, 11
Camphell-Mitrun, Inc. 10
Driyin Systems, Inc. 44, 45
Fern Hoffman Inc. 45
Dunbar 51
John/Pressey Associates, Inc. 51
dataPoint Co.-Antron 100, 101
Batten, Bartim, Dorrance & Osborne, Inc. 101
dataPoint Co.-Telfon Architectural Fabrics 6, 7
N.W. Ayer ABH International 6
Ejler Plumbingware, Div. of Wallace Murray Corp. C-4
Wierschem/Strandberg Associates 152
Follansbee Steel Corp. Group Marketing & Communications, Inc. 152
Foucault, Inc. 8
Forms & Surfaces 8
Starrell Broskey Associates 8
Frankel Associates, Inc. 145
Hess Marketing Communications 145
Gold Bond Building Products, Div. of National Gypsum Co. 122
Faller Klenk & Quidan, Inc. 122
Griffco, Inc. 40
Boordhardt, Lovett & Deen, Inc. 40
Helios Tension Products, Inc. 14, 15
Hissata Design Associates, Inc. 14
Hickman, W.P. Co. 144
John H. Room Advertising, Inc. 144
Homanite Co. 157
Gillespie Advertising, Inc. 157
ICG, Inc. 48
ICF Graphics, Inc. 48
Intervox, Inc. 146
Metrolux Advertising Associates 146
Interior Design Magazine 112
Kimball Office Furniture Co. Keller Crescent Co. 130
Levolor Lorentzen, Inc. 56, 57
Muller Jordan Weiss 56
Lynch, Kenneth & Sons Costich & McConneU, Inc. 142
Costich & McConneU, Inc. 142
Magic Chef, Inc. 40
Liler Neal Wein, Inc. 40
McGraw-Hill Book Co., Book Club Div. 113-115
Media Buying Services International, Inc. 113
Nucor Corp./Valcra Div. Fuller, Klenk & Quinlan, Inc. 18, 19
Ots Elevator Co. 140
Pappe Tyson, Inc. 140
Owens-Corning Fiberglas Corp. 59
Optigly & Matter, Inc. 59
Pacific Design Center 61
Parker, Charles Co. 32
Le Hour Advertising 32
Permagrain Products, Inc. 143
Aiken-Kynett Co., Inc. 143
Pittsburgh Corning Corp. 34, 35
David J. Westhead Co., Inc. 34
Plas Hold Corp. 147
PH Advertising 147
Poggenpohl USA Corp. 52, 53
Poggenpohl Advertising Group 52, 53
PPG Industries, Inc., Glass 42, 43
Ketchum, MacLeod & Grove 42
Procter, Harvey 43
Progressive Architecture Bookstore 148, 149
PSAE (Masterspec) 102
Harry J. Clarkson Associates, Inc. 102
Quaker Maid, Div. of Tappan Co. SK Advertising 153
Red Cedar Shingle & Handspilt Shake Bureau 155
Cedarcrest Advertising 155
Rosen-Fremark, Inc. 33
The Doves Company, Ltd. 33
Robco, Inc. 36, 31
Kerche & Associates 36
Saddlebrook 150, 151
Sargent & Co., Div. of Walter Kidde 117
Adams, Richard & Mason, Inc. 117
Schindler Haughton Elevator Corp. 17
Wierschem/Strandberg Associates 17
Starap Products 123
Greenscne Marketing Corp. 123
Star Manufacturing Co. 121
Ackerman McQueen Advertising, Inc. 121
Stark Ceramics, Inc. 128
Irving Thomas Associates, Inc. 128
Strode Corp., Sub. of Aluminum Co. of America 13
Lord, Sullivan & Yoder, Inc. 13
Tamko Asphalt Products 29
Noble & Associates 29
Tins Jost Corp. C-3
David W. Evans, Inc. 3
Tubular Specialties Mfg., Inc. 135
Arlen J. Kukun Advertising 135
U.S. Gypsum Co. 124, 125, 127, 129
Marinal, Inc. 129
United Technical Products, Inc. 141
Group 4 Advertising, Inc. 141
Ventarama Skylight Corp. 142
Channel Agency, Inc. 142
VIP Enterprises, Inc. 53
Albert H. Mallory III Advertising, Inc. 53
Wiley, John & Sons Inc. 142
609 Advertising Group 142
Wilson, Ralph Plastics Co. 64
McKone & Company, Inc. 64
Zero Weather Stripping Co. 116
Harvard, Perkins & Eldick, Inc. 116

Advertising Sales Offices
Stamford, Connecticut 06904: 600 Summer Street 203-348-7531
James J. Hoverman
Publisher
Harrington A. Rose
Director of National Advertising
Francis X. Roberts, Charles B. Selden,
Robert H. Rosson, District Managers
Chicago, Illinois 60661: 2 Illinois Center Bldg
Suite 1300 312-861-8880
Tony Aronne, James L. Hobbins
District Managers
Cleveland, Ohio 44113: 614 Superior Ave W
John F. Kelly, Western Sales Manager
Los Angeles, CA 91436: 16255 Ventura Blvd, Suite 301
213-990-9090
Philip W. Muller, District Manager
Atlanta, Georgia 30326: 3400 Peachtree Road, NE-Suite 811
Lennan Tower 404-237-5328
Harmon L. Proctor
Regional Vice President
Houston, Texas 77027
2100 West Loop South, Suite 510
713-961-7843
Calvin Clauzel, Director
Southwest Operations
United Kingdom
Reading, RG10 OQE, England
Wood Cottage, Sherlock Row
(0735) 310 302
TEK/P/B, Reading
Malcolm M. Thiele
Managing Director, U.K.
Tokyo, Japan 169
Banch Media Service
15 Sumicho, Shinjuku-ku
Genzo Uchida, President
Paris, France
Cables
18 rue Gounod, 92210
St. Cloud, France 602-24-79
Yvonne Mekher, Manager
Oriente (TR), Italy
c/o Marcello, La Torretta
2100 West Loop South, Suite 510
United Kingdom 73-581-302
Brad Nichols, Representative